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THE EXTRASYSTOLE.*

By JAMES W. HUNTER, JR., M. A., M. D., F. A. C. P., Norfolk, Va.

"Life insurance companies are giving more and more attention to heart conditions," writes the associate medical director of one of our largest life insurance associations under the date of October 20, 1928, "and especially in connection with an examination involving the use of the electrocardiograph. I have just returned from the annual meeting of the Medical Directors' Association of America, held last Thursday and Friday in New York City. Special emphasis was placed upon the value of the electrocardiograph in cases where question arises as to the integrity of the heart muscle." "I confess that up to the present time my contact with the electrocardiagraph," writes another, "has not been of a comforting character. The thing that gives us more concern than anything else is the determination of the occasional extrasystole and the reports we have had so far contain too many of the 'may or may not be.'" It is this question of "may or may not be" that has induced me to write the paper that I now present.

A glance at, and an analysis of the leading textbooks on medicine that are available (I say "textbooks" advisedly, as the great mass of periodical literature on cardiology that has now accumulated is not to be consulted outside of certain libraries and it is the duty of the author of a textbook carefully to examine all sources of information and to give his readers the "best that is known and thought") leads us to the conclusion that there are definitely three schools of thought in regard to the clinical interpretation of the extrasystole. First, we have the school of Baumgarten, or the teaching that the extrasystole is of grave import; second, the school of Mackenzie, who considers the extrasystole of no importance; and, third, the school of Lewis and his followers, who, while acknowledging the extrasystole as a pathological entity, frankly beg the question as to its clinical import. Let us consider these teachings in some detail.

In the first edition of his monumental work on medicine, published in 1893, the late Sir William Osler speaks of the various types of arrhythmia and quotes Baumgarten. "The causes of these various disturbances of rhythm," he writes, "are thus described by G. Baumgarten:

"'(1) Those due to central cerebral causes, either organic disease, as in hemorrhage, or concussion; more especially physical influences.

"'(2) Reflex influences, such as produce cardiac irregularity in dyspepsia and diseases of the liver, lungs, and kidneys.

"'(3) Toxic influences. Tobacco, coffee, and tea are common causes of arrhythmia. Various drugs, such as digitalis, belladonna, and aconite, may also induce it.

"'(4) Changes in the heart itself. (a) In the cardiac ganglia. Fatty, pigmentary, and sclerotic changes have been described in diseases of this sort and may have an important influence in producing disturbances in the rhythm, but as yet we do not know their exact significance. They may be present in cases which have not presented arrhythmia. (b) Mural changes are common in conditions of this kind. Simple dilatation, fatty degeneration, and sclerosis are commonly present, the two latter usually associated with sclerosis of the coronary arteries.'"

In this opinion Osler is supported by Anders and Musser in 1920, who declare that Baumgarten's classification of the causes of the extrasystole, as quoted by Osler, is the best. A little later, in 1924, Norris and Landers write that the significance of extrasystoles is very variable. To quote: "They (the extrasystoles) may be due to many direct or reflex causes. Thus the excessive use of tobacco may produce them, as may increased blood pressure, especially with a weakened myocardium." And still later, in 1925, O. T. Osborne, while quoting others, gives it as his own opinion that

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"while young persons may occasionally have these extrasystoles, they are most commonly found in older persons and those who have heart disease, and in older persons (who) have never had such irregularity of the heart, it seems to be indicative of beginning cardiac derangements."

From the school of Baumgarten, or those who think that the extrasystole is of grave import, let us turn to that of Mackenzie. "For over forty years," he writes in the fourth edition of his book on diseases of the heart, published posthumously in 1925, "I have kept records of patients with extrasystoles. They were found to be rare in the young, and a little more frequent about middle age. Over fifty years of age many people exhibit them, while probably every person over sixty exhibits them at one time or another, or continually. We recognize in this review an occurrence similar to what happens to people with grey hairs, and so far as I have seen, I would attach no more gravity to the one sign than to the other." "If cardiac impairment is found associated with extrasystoles," he continues, "then the prognosis depends upon the condition of the heart which leads to the impairment, and not to the extrasystole, which, at the worst, indicates but a coincident change."

Pratt, writing also in 1925, agrees with Mackenzie and defines an extrasystole "as a premature contraction of the heart that is independent of the normal rhythm and arising in response to an impulse originating in some part of the heart other than the sinus node." "Probably few people," he continues, "who attain to middle life have escaped having an occasional extrasystole at sometime or other, although the majority have been quite unaware of its presence. * * * Rarely found before the age of twenty, they increase in frequency as age advances. They are commonly found after middle life in persons who present evidence of arteriosclerosis (Hay), but Mackenzie says that his experience has led him to expect them in every one over sixty years of age. Whether frequent and persistent extrasystoles are more common after forty years of age in patients who present definite signs and symptoms of heart disease than in those with normal hearts has not been settled. They are often met with in young nervous individuals. They may be produced in susceptible subjects by tobacco or alcohol. Digitalis induces extrasystoles in some people."

In marked contrast, however, to the schools, which we have called those of Baumgarten and Mackenzie, we have that of Lewis and his followers, who frankly beg the question. Lewis defines extrasystoles as "contractions of the heart which disturb the rhythmic sequence by appearing early and in response to pathological impulses." "It must be admitted," he continues, "that all such beats are evidence of a pathological condition and that the pathological process has its seat in the tissues of the heart. The presence of premature contractions is an indication of a local disturbance of cardiac nutrition, whether temporary or permanent, but it is an aspect that should not be allowed undue prominence. Very many people are temporarily affected by premature beats which do not reappear, while the heart manifests no sign of further damage, either at the time or afterwards. In such instances it is impossible to suppose that the disturbance of the cardiac function has been more than transient or that the nature of it has been serious. Observations and inquiry also teach that they may be present constantly and for long periods, and that those who manifest them may do so from an early to a good old age, such patients never showing any other sign or symptom of cardiac disability. It may be said, therefore, that in themselves premature beats cannot be regarded as evidences of serious involvement of the heart muscle, although such involvement is often found in conjunction with them. * * * Because they frequently consort with relatively grave cardiac maladies, their detection demands a close scrutiny of the heart from other points of view. When after such scrutiny, no further evidences of cardiac damage are detected, their value as signs becomes negligible. It is also to be observed that if additional and significant symptoms or signs are found, the prognosis should be based on these, and the extrasystoles again become negligible. In other words, they serve a purpose in diagnosis by directing attention to the heart, but are of little or no value in prognosis."

Cohn writing in Nelson's Loose Leaf Living Medicine also begs the question, as does also McCrae in the last edition of Osler's work, 1926, Hamburger in Cecil's Textbook of Medicine in 1927, and Willius in 1929. The case has, however, been so succinctly argued by Roth in 1928 that it is thought eminently worth while to quote him here.

"Our views regarding the etiology of extrasystoles are based largely on speculation. Extrasystoles are occasionally met with in young children; most often, however, they are found in the middle-aged. Almost every one has them at one time or other. They are not necessarily associated with grave cardiac conditions; in fact, they are rather infrequently met with in the course of decompensation as a result of valvular heart disease, except at the time of a sudden occlusion of one of these vessels. To assume a pathological condition, therefore, every time we encounter extrasystoles, especially in the face of the great frequency with which they occur in the apparently healthy, would be giving these disorders an entirely unjustifiable and undue prominence.

"No doubt, temporary *disturbances in cardiac nutrition* play an important role in some cases; while in others, *toxic states* of the myocardium may be the underlying causes. *Certain drugs*, notably those of the digitalis group and quinidine may cause extrasystoles to appear in large numbers, together with other evidences of toxic involvement of the specific system and the myocardium proper (sino-auricular block and auriculo-ventricular heart block). Accordingly, when extrasystoles appear, the further use of these drugs is contraindicated. We have no means of judging the possible effects of *endogenous toxins* (gastro-intestinal, uremic, etc.) upon the intrinsic cardiac mechanism. They, too, may play a part. It is of interest to note that extrasystoles have been observed in the presence of *focal infection* and that the eradication of the infection was promptly followed by the termination of the extrasystolic arrhythmia. *Nervous influences* are known to enhance the frequency with which extrasystoles may appear; but it is questionable whether nervous influences can ever produce them in a perfectly healthy organ. It is more likely that the nervous influence merely augments the mischief in a heart that is already the seat of some pathological process or one that bears the brunt of at least a mild toxemia.

"In any event, judging from the foregoing, the *mere presence* of extrasystoles cannot be used as a guide in prognosis. To quote Lewis: 'They serve a purpose in diagnosis by directing attention to the heart, but are of no value in prognosis.'"

From this bewildering array of conflicting evidence and opinion is there no escape? What are the truths to be gathered from the presence of the extrasystole? Is it of a pathological or of a non-pathological import? How is it to be clinically interpreted? Let us consider the question. Let us consider in some detail the diagnosis, the origin and the nature of the extrasystole.

From a clinical standpoint the extrasystole is easily diagnosed. A careful examination of the pulse by the educated finger will detect it. We may have an extra beat almost immediately following the normal, with a normal or compensatory diastole, an extra or premature beat occurring at regular intervals, as a bigeminy or trigeminy, or even an extra beat between two normal ones, an interpolation, as it were. Similarly, we may auscultate the apex beat; all of the phenomena observed by the educated finger will be detected by the educated ear. Further, it is observed that extrasystoles almost invariably occur in association with a slow pulse; often an acceleration of the heart beat by exercise will overcome them and thus afford a differential diagnosis between this and other cardiac arrhythmias.

But we must recollect that there is always a certain personal equation of the examiner. No two of us will see the same picture or appreciate the same findings. Of all of the senses, that of sight is the most perfect. Like Othello, we would have the ocular proof. "Inexact method of observing, as I believe," writes Sir Thomas Lewis, "is one flaw in clinical pathology today. Prematurity of conclusion is another, and follows in part from the first, though in chief part an unusual craving and veneration for hypothesis, which besets the minds of most medical men, is responsible." Speculation in regard to the differentiation, the origin and the nature of extrasystoles is not sufficient.

With this thought in mind Mackenzie in 1892 introduced his polygraph. By simultaneous tracings of the jugular and radial pulses he was able to obtain the origin of the extrasystole. "In 1892," he reminds us, "I obtained the first record in a human subject which showed the relation of the auricle to the ventricle, in what is now recognized as the ventricular extrasystole. In the interpretation of the tracing I was able to demonstrate that the ventricle contracted earlier than, and independent of, the auricle, so that while the apex beat showed an irregularity, the rhythm of the auricle was undisturbed." He was able to

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differentiate the extrasystole arising from the auricle, or that from the auriculo-ventricular node, and that arising from some point in one of the ventricles. This was, in fact, the first great step in modern cardiology. I have, accordingly, reproduced two of the tracings as taken from Mackenzie's book. Figure 1 is

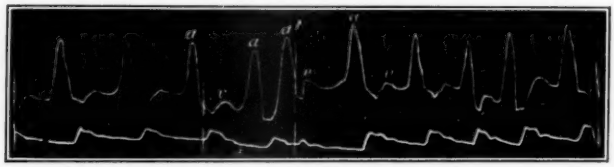

Fig. 1.—From Mackenzie. Simultaneous tracings of the jugular and radial pulses, showing a large wave (a′) due to an extrasystole of the auricle.

that of an extrasystole of an auricular origin. Here we see an extra auricular contraction or double "a" wave. In Figure 2 there is no reduplication of the auricular wave, though in this case, as before the "a" wave is somewhat increased. The radial tracing shows a distinct

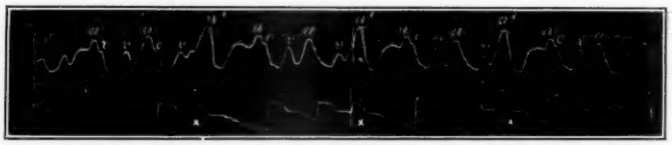

Fig. 2.—From Mackenzie. Extrasystole of a ventricular type. It will be noted that the extrasystoles (x) are followed bya lon g pause.

reduplication. Accordingly, we must consider that, whereas in Figure 1 the extrasystole is distinctly of an auricular origin, that in Figure 2, in showing no reduplication of the auricular wave, but one in the radial tracing only, must be of a purely ventricular origin. To

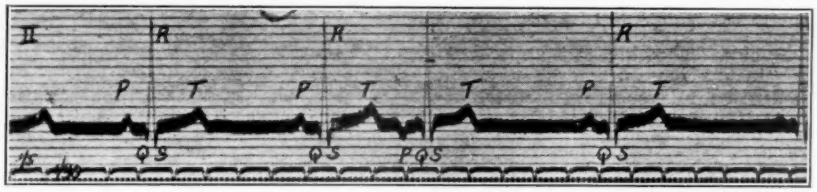

Fig. 3.—From Lewis. A clinical electrocardiogram, showing a normal heart rhythm disturbed by a premature beat. The third beat presents a ventricular complex of normal outline; it has arisen therefore in a supraventricular focus. It is preceded by an auricular complex which is inverted, showing that the wave has coursed abnormally in the auricle and that the premature impulse arose in an abnormal auricular focus. Time in fifths and thirtieths of a second.

quote Mackenzie: "The auricular extrasystole is recognized by the auricular contractions occurring prematurely, the nodal extrasystole by the simultaneous and premature contraction of auricle and ventricle, and the ventricular

tricular, but even to tell from which ventricle the impulse starts. Perhaps it will be well to remember that the auricular and ventricular systoles are not simultaneous or continuous, as was formerly taught, and that there are four chambers in the heart. By some it is even taught there is a possibility that the auricular complex, or P wave, is a combination of two beats; this, however, is pure speculation. In the frog, however, as in all animals with but a single ventricle, there is an

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absence of the first descending ramus, or Q wave, of the ventricular contraction. If, however, two frogs are placed in series, there immediately results a difference in the electrocardiographic tracing (Samojloff). So that it is distinctly true that the QRS or ventricular complex is a combination of the beats of the two ventricles. It is by this means that we are able to differentiate a preponderance of either ventricle, to obtain the electrical axis and definitely to locate the ventricular extrasystole of a right or left ventricular origin.

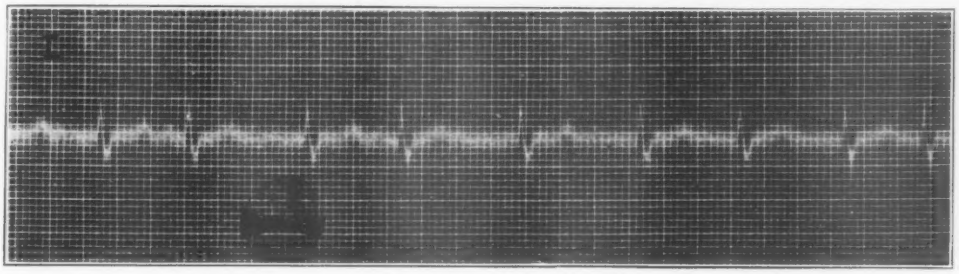

Fig. 4.—Extrasystole of an auricular origin. Note the irregularity in length of the cycles. Time in fifths and twenty-fifths of a second.

Figure 3, which I have reproduced from Lewis, shows an extrasystole arising in the vicinity of the sino-auricular node, that is, an extrasystole of an auricular origin. It will be noticed in this case that the diastole following the second normal beat is greatly shortened, so much so that the auricular complex, or P wave, follows closely upon the ventricular rebound, or T wave, and, consequently, that this cycle is much shorter than the previous one. Figure 4, from a case referred to me by Dr. H. S. Baker, also shows extrasystoles from an auricular origin. It is this type of case that is liable to be confused with a sinus arrhythmia. In Figure 5, which I have taken from a case referred to me by Dr. W. B. Martin, we have an interpolated extrasystole arising from the left ventricle (the second QRS), which is placed between two normal beats, the entire cycle being slightly prolonged. Next follows a normal cycle; then another extrasystole, arising from the left ventricle, with a compensatory pause, the sum of the cycle of this extrasystole and the diastole following being equal to two normal beats. In Figure 6, a case sent me by Dr. M. S. Fitchett, we have the extrasystole of a functional nodal type or one arising from an impulse at the auriculo-ventricular node. It will be noted that the auricular complex, or P, falls just after the completion of the QRS and just before the beginning of the T wave. These extrasystoles, it will be noted, arise from the right ventricle; again we have the compensatory pause. In Figure 7, from a case referred to me by Dr. W. B. Martin, it will be noted that the extrasystole arises, as before, from the right ventricle, but that the auricular complex falls upon the ascending portion of the T wave, another case of functional extrasystole, with a compensatory pause as before. In Figure 8, which is taken from the same case

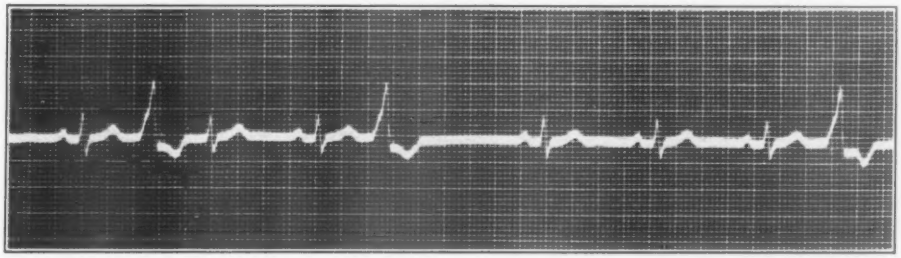

Fig. 5.—Interpolated extrasystole arising from the left ventricle (2nd. QRS), followed by a normal beat, in turn followed by another extrasystole with a compensatory pause. Time in fifts and twenty-fifths of a second.

as that from which Figure 5 was taken, an interpolated extrasystole (right ventricle) is shown and also one of the usual type. Figure 9, a case referred to me by Dr. H. S. Baker, is most interesting. It shows extrasystoles of a right ventricular origin occurring in a case of auricular fibrillation with a left ventricular preponderance. The auricular beat was 230; the ventricular, 120.

The discovery of the genetic system of the heart by Tawara in 1905, the clinical observations of Mackenzie and the laboratory researches of Lewis and others have shown most convincingly that the extrasystole is not due to any pathological state of the myocardium. The bug-bear of myocardial degeneration as a cause for extrasystole can, therefore, be eliminated. Lewis and his co-workers, as well as many other physiological researchers, have shown that a mechanical, thermal or electrical stimulation of the heart muscle will induce an abnormal contraction or extrasystole. It is this very work that allows us, as we have shown above, to tell definitely from what point the extrasystole arises. Lewis, indeed, has demonstrated different curves according to the points selected in the same ventricle. It is also shown that certain drugs, such as chloroform, digitalis and drugs of the digitalis group, such as strophanthus, nicotine, potassium salts, barium chloride and aconitine, will, likewise, reproduce them. If the doctrine of modern science holds in medicine as well as elsewhere that there is no effect without a cause and, conversely, that like causes produce like effects and also that like effects are usually produced by like causes, it is easy to reason that the extrasystole in most cases is the result of an irritation of the cardiac muscle and that a damaged myocardium plays no role in the resulting phenomena.

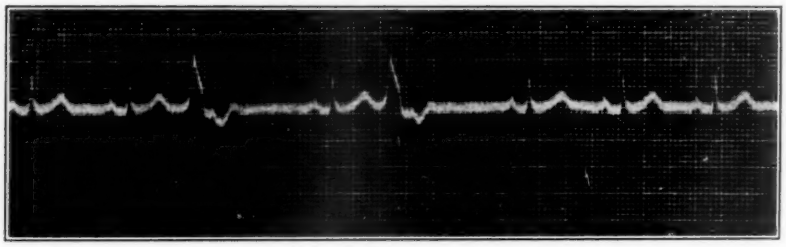

Fig. 6.—Junctional extrasystole of right ventricular origin. Time in fifths and twenty-fifths of a second.

It is usually pointed out that one of the early signs of infectious disease, particularly typhoid fever, is a certain dicrotism of the pulse. It is agreed by all writers upon cardiology and clinical observers that a stimulation by certain drugs will produce extrasystoles. Even Mackenzie admits a predisposition to extrasystoles from "some digestive disturbance, or such articles as tobacco, tea or coffee." Some suggest the influence of focal infection.

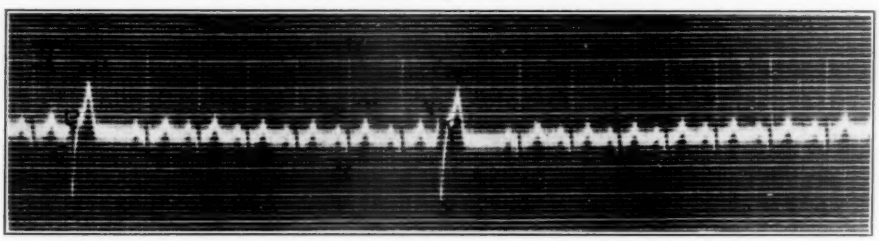

Fig. 7.—Junctional extrasystole of right ventricular origin. P falls upon ascending limb of T wave.

All agree that the first step in the treatment of the extrasystole is the withdrawal of the offending drug or stimulus. Now, as mechanical stimulus of the heart muscle is almost impossible in the ordinary living human being, we are limited to such stimuli as thermic changes, drugs and poisons. Some believe that psychic and nervous influences play an important part, but, again to quote Roth, "it is ques-

tionable whether nervous impulses can ever induce them (extrasystoles) in a perfectly healthy organ." To sum up, therefore, it is my own conclusion that in the human being the extrasystole results from a thermic, toxic or drug stimulation of the muscles of the heart. This is brought about by the direct contact of the blood with the nervous structures of the ventricles and in case of the extrasystoles arising from the auricle or auriculo-ventricular node by the blood in the coronary vessels.

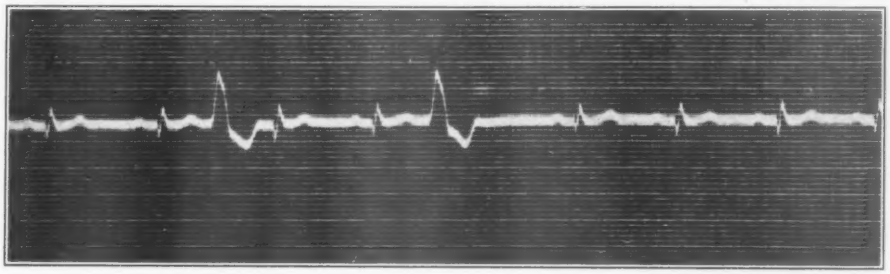

Fig. 8.—Interpolated extrasystole of right ventricular origin (x) and one of the usual type (y). Time in fifths and fiftieth of a second.

To refer to the assumption that neurotic influences play a part in the production of the extrasystole: it is my belief that we should definitely determine the source of the extrasystole. If the extrasystole is of a right or left ventricular origin, it is only by the wildest stretch of the imagination that a neurotic or psychic cause can be assigned to it. If, on the contrary, it is definitely determined that the extrasystole arises from the sino-auricular node or pacemaker, it is easy to see that nervous and psychic impulses might be the cause. It has been definitely shown, as we shall remember, that the sino-auricular node acts as a pacemaker between two powerful factors, the accelerator or sympathetic system and the retarding system or vagus. An extrasystole of sino-auricular origin would, therefore, become a sort of sinus arrhythmia. If too fast a rhythm is developed, vagal stimulation will retard it; similarly, a drug acting upon the sympathetic system or one inhibiting the vagus, such as atropine, will increase the rate. If, therefore, I may take exception to the statement made by a great majority of the writers upon cardiology that it is of no clinical import as to where the extrasystole arises, I would proclaim that the extrasystole arising from the sino-auricular node or pacemaker may be of a neurotic or psychic origin, but that arising from the auricular-ventricular node or in either ventricle is decidedly pathological.

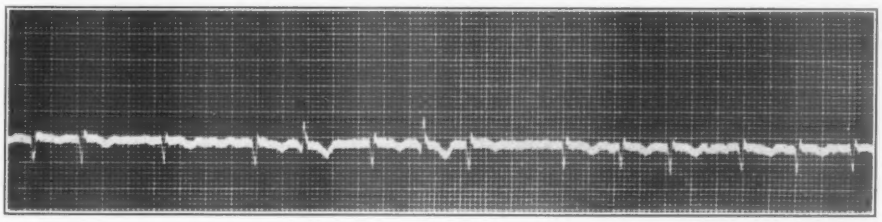

Fig. 9.—Extrasystoles of right ventricular origin (x) occurring in a case of auricular fibrillation. Time in fifths and twenty-fifths of a second.

It will sometimes happen that the electrocardiographic tracing will show extrasystoles arising from more than one source. Examples are found, in which extrasystoles arise from both ventricles in the same tracing. It frequently happens that extrasystoles succeed themselves; and this without regard to a pulsus bigeminus, trigeminus, etc. From these observations the question arises as to the nature of the extrasystole. To this very consideration Lewis in his book on the graphic representation of the heartbeat devotes many pages. He summarizes that either of two hypotheses will explain them. We may have the

theory of re-entry or that of parasystole. In the one the supposition is made that a circus movement can exist in the ventricles, as in the case of the auricles in auricular fibrillation; the other theory supposes that there are two distinct points of origin. Either supposition will explain the phenomena observed.

A prognosis, to be of value, must be based upon underlying pathology and clinical observation. In the case of the extrasystole, we have pointed out that extrasystoles may be functional or organic. We have further pointed out as our own conclusion that the auricular extrasystole, and especially that arising at the sino-auricular node, may be either neurotic or pathological; that that arising from the ventricle or at the auriculo-ventricular node is distinctly pathological. We have further shown that the ventricular extrasystole may be due to thermic, toxic or drug excitation. Again it may be emphasized that the extrasystole is in no sense the result of, or associated with, a damaged endocardium or myocardium. From these it is clearly evident that a pure extrasystole of itself will have no effect upon the life or period of expectancy of the individual. The extrasystole must serve as a signal for systematic and organized search and the cause, if possible, be determined. As regards the happiness of the patient much is to be said. The occasional extrasystole or continuing extrasystole is more than often the cause of "heart consciousness." From this, fortunately, no one ever dies. The patient only becomes worried about himself. Fortunately again, all writers agree that the more "heart conscious" the patient, the less the real pathology. Conversely, the more real the pathology, the less conscious the patient.

From this we would conclude that the treatment of the extrasystole resolves itself as to whether we are dealing with a functional, a neurotic or an organic condition. We shall strive as far as possible to remove the cause. We shall advise against undue exposure to heat or cold, undue amounts of hot or cold beverages and a return to the simple life. If the extrasystole be due to focal infection, we shall strive to remove the offending cause. Let us remember fully, however, that the removal of a source of focal infection will not always relieve the trouble caused by the infection; for the germs have already multiplied in the blood or other tissue. Undue excitement in some cases must be prohibited. Often slight or moderate exercise will quicken the rate of the heartbeat and overcome the extrasystole. By some a moderate devotion to golf is recommended. At all events, it is the patient and not the disease that should be treated. For "heart consciousness," which is often distressing, quinidine in doses of two grains two or three times a day is often recommended. But, again, it must be emphasized that it is the patient who is to be treated. If the theories, which we have advanced, are true, a return to the simple life with the elimination of overeating or too many hot or cold drinks, the elimination of such stimuli as tobacco, tea, coffee and perhaps alcohol, and the elimination of all foci of infection, should in almost all cases bring about a cure. To repeat: The treatment of extrasystoles is in almost all cases a hygienic problem. Drugs are rarely needed.

To summarize:

The extrasystole may be functional or organic.

If the extrasystole is of an auricular origin, it may be either neurotic or organic.

If the extrasystole is of a ventricular origin, it is purely organic.

The extrasystole should serve to call our attention to some form of stimulus or focal infection.

While often distressing, the extrasystole is in itself of no value in regard to the prognosis or expectancy of life.

The prognosis of the underlying cause is the prognosis of the extrasystole.

Medical Arts Building.

DISCUSSION.

DR. J. C. FLIPPIN, University: I was very much interested in Dr. Hunter's historical summary of our knowledge of the extrasystole and in the charts and photographs exhibited. It might not be out of place to make some remarks on the practical significance of extrasystoles. With the exception of sinus arrhythmia, which is present in a large percentage of young people, extrasystole is the most frequent of the cardiac arrhythmias. In perhaps ninety-nine cases out of one hundred it can be recognized without the aid of instruments of precision, such as the polygraph or electrocardiograph. It occurs in people without any other demonstrable cardiac lesion. It perhaps cannot be regarded as being a normal phenomenon but, in the absence of any other symptoms or signs of cardiac disease, the occurrence of extrasystoles is relatively of small importance. The onset of this form of irregularity may accompany organic heart disease and where the extrasystoles occur very frequently they probably render the heart less efficient. Extrasystoles may be noted at one period of an individual's life; they may disappear for periods of years, never to reappear or to recur later. Apparently, this irregularity may be due to any one of a number of toxic

or reflex causes. The toxaemias of the acute infectious diseases may be accompanied by extrasystoles. The over-use of tobacco or coffee will in some individuals cause such an arrhythmia. It has been my observation that the extrasystoles of the auricular type are rather more significant of organic disease than the ventricular form.

DR. A. L. TYNES, Staunton: I hesitate very much to discuss this paper, particularly in this day when medicine has been reduced to a more or less exact science and when every statement is expected to be buttressed with a series of charts, facts and figures, and laboratory findings, and I have none at hand to present to this society. I do, however, wish to refer to a remark made to me a good many years ago by Dr. Paul D. White, who was at that time only recently returned from his studies with Mackenzie and Lewis. We were discussing a patient of mine who was having cardiac distress due to extrasystoles which proved to be due to drinking coffee, and which he could control at will by giving up that beverage. Dr. White had this to say: "We do not know the cause of extrasystoles, or premature beats, in a large number of cases, but so far as we do know they are not due to any organic disease of the heart and have no especial significance except th.s; it has been observed that the incidence of cardiac disease in later life is more often noted in patients who have premature beats in early life than in those who have never shown the presence of extrasystoles." Since hearing Dr. White make this statement I have had occasion to observe a number of patients who had extrasystoles during their first three or four decades, and in whom no other evidence of cardiac disease could be found, who after ten or twelve years have shown evidence of heart disease.

DR. T. DUCKETT JONES, Boston, Mass.: I have been working with Dr. White for several years, and he has made a pretty wide survey of his cases. I know that at the present time Dr. White does not feel that people with extrasystoles are necessarily more likely to develop heart disease than others. But he does find that people with auricular extrasystoles more commonly have them associated with heart disease than those with the ventricular extrasystoles. I think you will find that ventricular extrasystoles are more often found in persons who never develop heart disease, than auricular extrasystoles.

SOME EFFECTS OF PARALYSIS OF THE DIAPHRAGM IN THE TREATMENT OF PULMONARY TUBERCULOSIS.*

By
RICHARD H. MEADE, JR., M. D., University, Va.,
and
FRANK B. STAFFORD, M. D., Sanatorium, Va.

Since paralysis of the diaphragm was introduced in 1911 by Stuertz as an adjunct in the treatment of pulmonary tuberculosis, a very extensive literature has developed. The good results accomplished have been reported so fully that they are common knowledge. Not only have lesions of slight extent yielded to this treatment, but even well-defined cavities have been seen to collapse in a short time. The recent article of Mayer and Leetch in the *Journal of the American Medical Association* gave striking examples of this latter change.

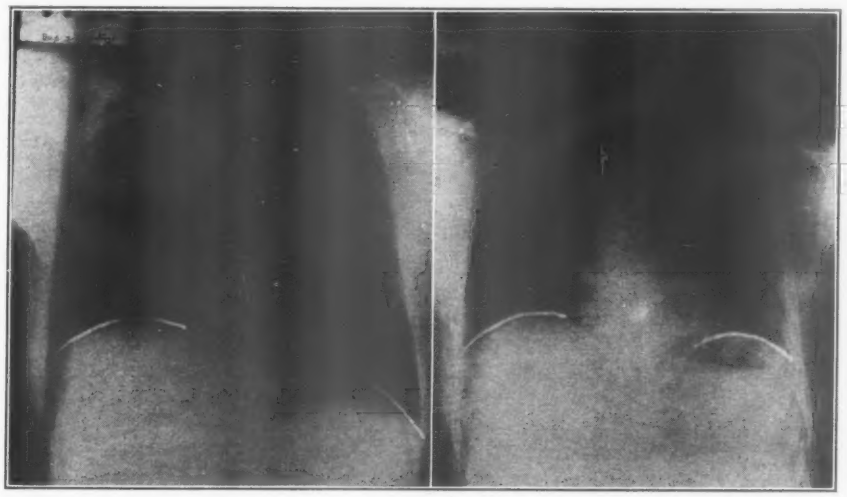

Fig. 1.—Roentgenorgrams of chest of L. H. The one on the left was taken on full inspiration, the one on the right on forced expiration. The right diaphragm has been paralyzed and does not change its position. The movement of the left is normal.
N. B. Diaphragm has been outlined with ink.

However, it is not the purpose of this paper to review the literature nor to report personal experiences, but to emphasize by specific illustrations some of the ways in which diaphragmatic paralysis accomplishes its results.

*From the Department of Surgery and Gynecology, University of Virginia, and from the Blue Ridge Sanatorium.
Read at sixtieth annual meeting of the Medical Society of Virginia, in Charlottesville, October 22-24, 1929.

The first effect of paralysis of the diaphragm is loss of motion. This may be complete and the diaphragm become fixed in one position, but more frequently a slight paradoxical movement persists. In this latter state the diaphragm becomes slightly elevated on inspiration and slightly depressed on expiration. The first effect is well shown in the present case in which roentgenograms of the lungs in full inspiration and expiration are shown. The movement of the normal left side is in sharp contrast to the fixation of the paralyzed right side. It is obvious that such a condition must aid in rest of the corresponding lung.—Figure 1.

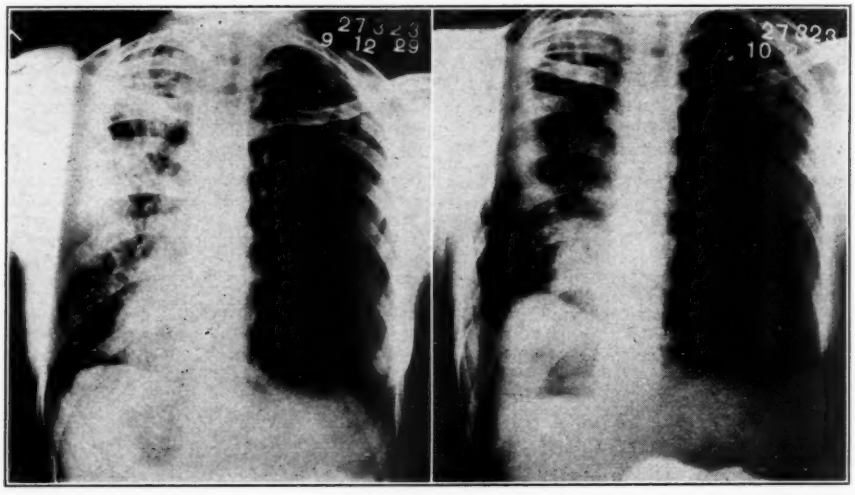

Fig. 2.—Roentgenograms of chest of Mrs. S. The one on the left was taken before paralysis of the left diaphragm. A cavity can be seen just below the left clavicle. The picture on the right shows the elevation of the right diaphragm after its paralysis and an upward displacement of the cavity.

Another striking effect of paralysis of the diaphragm is the elevation that results and which decreases the capacity of the homolateral pleural cavity from 400 to 800 c.c., thus raising slightly the intrapleural pressure and

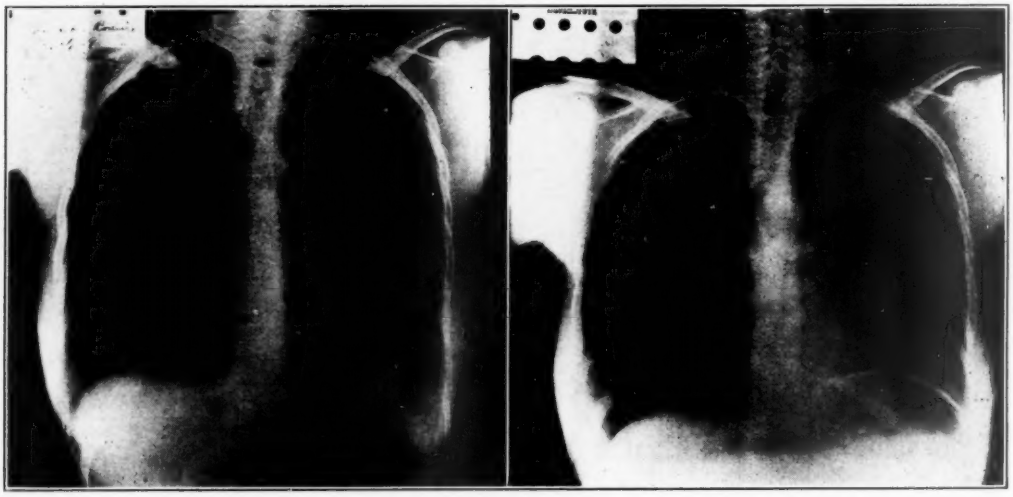

Fig. 3.—Roentgenograms of chest of Mrs. R. Taken before and after paralysis of the left diaphragm. The relaxation and elevation of this structure has done away with the pull on the adhesions between it and the lung.

causing a definite relaxation of the lung. This elevation of the diaphragm is evident in the roentgenograms of Mrs. S., showing the level of this structure before and after paralysis. in the first film is seen to be just behind it following paralysis of the diaphragm.—Figure 2.

The nagging pain in the neck and shoulder, resulting from diaphragmatic irritation due

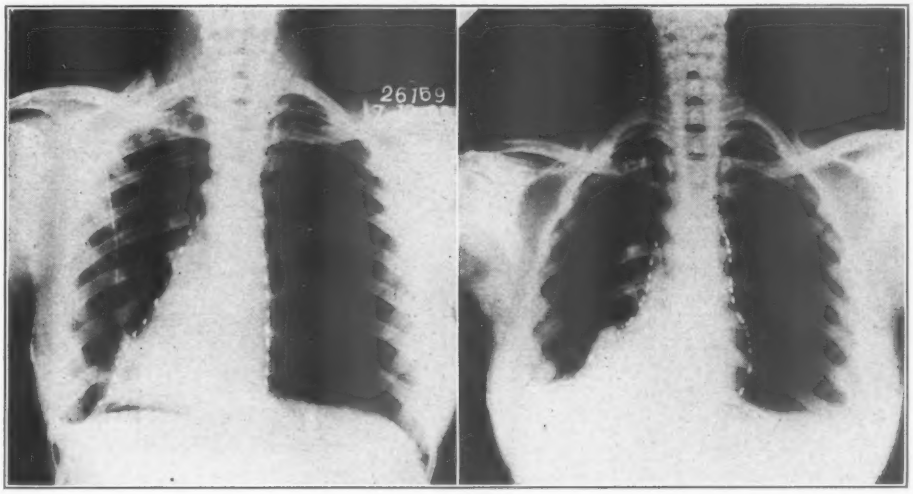

Fig. 4.—Roentgenograms of chest of F. B. The one on the left shows the condition of the left lung and heart following the induction of a partial pneumothorax. Adhesions between the pericardium, the lung and the diaphragm interfere with proper compression of the lung and keep the heart displaced to the left. The roentgenogram on the right was taken after paralysis of the diaphragm and before any more air was introduced.

N. B. Left border of lung is outlined by a continuous line, the heart shadow by dotted lines.

That the elevation of the diaphragm can influence the entire lung, even in the presence of adhesions, is apparent in these films. The cavity which is seen well below the left clavicle to the pull on adhesions between the lung and this muscle, is worthy of attack. And, as would be expected, relaxation of these bands by paralysis of the diaphragm at once relieves

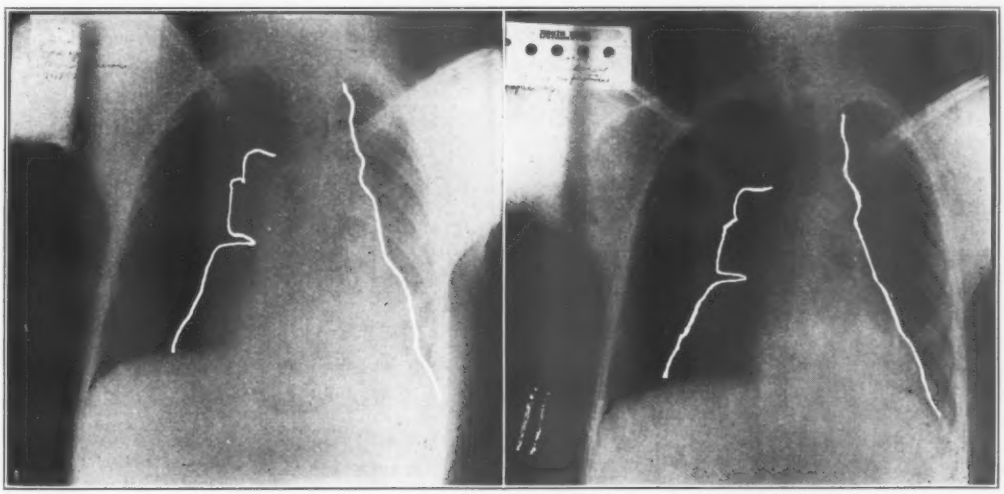

Fig. 5.—Roentgenograms of chest of W. A. on forced expiration. The right lung has been compressed by an induced pneumothorax. The roentgenogram on the right was taken after paralysis of the right diaphragm. Shifting of the mediastinum to the left is less marked. The intrapleural pressure was the same in each instance.

N. B. Right lung and left border of mediastinum and heart outlined with ink.

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the pain. In the case of Mrs. R., here presented, this referred pain was an annoying symptom. Roentgenograms showed a definite tenting of her diaphragm with evidence of an adhesion between this muscle and her lung. Following paralysis of the diaphragm, relaxation occurred and the pain disappeared.—Figure 3.

Adhesions notoriously interfere with the production of a satisfactory artificial pneumothorax. When these bands involve the diaphragm, help is obtained from paralyzing this structure. In one of our patients (F. B.) this was found to be true, and, as shown in her roentgenograms, a decidedly better collapse developed as soon as this procedure was completed.—Figure 4.

In pneumothorax cases in which adhesions are absent, but in which satisfactory collapse of the lung cannot be secured because of the extreme mobility of the mediastinum, fixation of the diaphragm seems to play a helpful role. As we have just begun the study of this aspect of the pneumothorax problem, our results cannot be considered final. However, in several cases under observation there has been noticed a slight, but definite, decrease in the mobility of the mediastinum and a correspondingly better collapse of the lung following paralysis of the diaphragm. This effect is seen in the roentgenograms of Mr. A., taken before and after avulsing his phrenic nerve. As the maximum degree of mediastinal movement was noted on expiration, this is the state of the lungs in these films. The intrapleural pressure was the same in each instance.—Figure 5.

It has also been observed that the less diseased, or normal, portion of the collapsed lung moves quite markedly on respiration. In the roentgenograms of Mr. A., the expansion of the lower lobe on inspiration is well shown. It would seem that such movements must cause tugging on the diseased portion and thus interfere with its maximum rest. Indeed, in this same roentgenogram this fact can be noted. Furthermore, the adjacent lung tissue is seldom entirely free from involvement and, therefore, should also be kept quiet. The lessening of the movements of this part of the lung after paralysis of the diaphragm is also apparent in these roentgenograms of Mr. A. Great care was taken to have the intrapleural pressure as nearly equal as possible when the pictures were taken, before and after operation.—Figure 6.

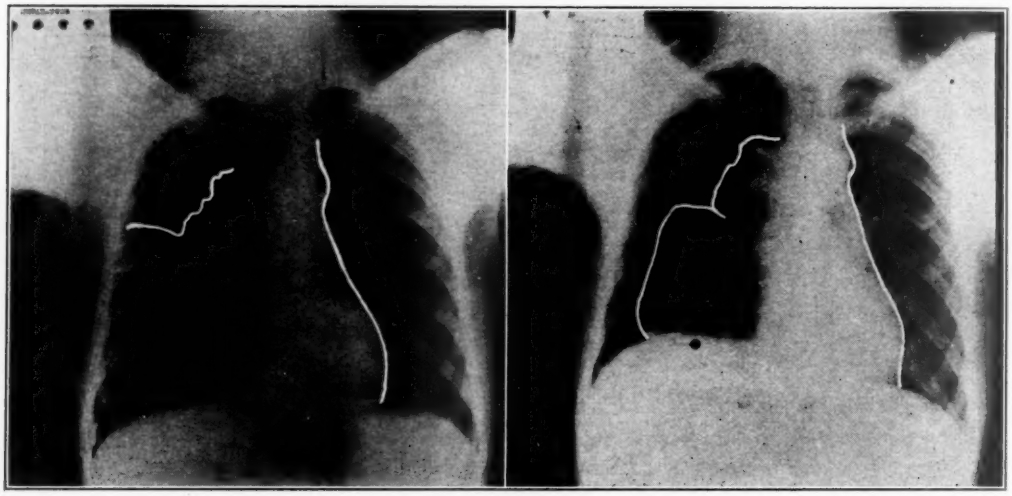

Fig. 6.—Roentgenograms of chest of W. A. on full inspiration. Before paralysis of the right diaphragm the corresponding lower lobe almost reaches the chest wall. After paralysis and without change in the intrapleural pressure this lobe is seen to be less expanded. A difference may also be noted in the upper collapsed lobe.
N. B. Right lung and left border of mediastinum and heart outlined with ink.

Summary.

The principal effects of paralysis of the diaphragm in the treatment of pulmonary tuberculosis, as illustrated in this paper, are:

1. Loss of motion of the diaphragm.
2. Elevation of the diaphragm.

3. Relaxation of adhesions between the diaphragm and lung.

4. Increased efficiency of pneumothorax by aiding in immobilization of the mediastinum and in decreasing movements of the compressed lung.

DISCUSSION.

DR. J. B. NICHOLLS, Catawba Sanatorium: In short, the main use and purpose of artificial pneumothorax is to put the diseased lung at rest. From the X-ray films of pneumothorax cases you will sometimes get a false impression and it will appear, if you do not think about it, that the lung is absolutely at rest and that there is no movement. But it is astonishing at times to see under the fluoroscope how much movement an apparently completely collapsed lung has, and I think the means which Dr. Meade has brought out is going to be of great aid in its use along with the artificial pneumothorax.

DR. FRANK B. STAFFORD, closing the discussion: The main factor we are trying to emphasize in this paper is rest. Dr. Wright has gone over very carefully in his paper the necessity of rest. The operation for paralysis of the diaphragm is solely for the purpose of resting the diseased lung more, and anything that will accomplish this is helpful. This operation is very simple as compared to a surgical collapse, is safer, and is certainly of much benefit. Primarily, this work was started by us as an aid to pneumothorax; but we have found, as Dr. Meade has pointed out, that other cases in which pneumothorax treatment could not be given because of pleural adhesions can, by paralysis of the diaphragm, be restored to a life of usefulness more quickly. Any measure that will aid in giving rest in cases of pulmonary tuberculosis is of value.

ABDOMINAL MANIFESTATIONS OF TETANY.*

By WM. H. HIGGINS, M. D., Richmond, Va.
From Medical Department of St. Elizabeth's Hospital.

Tetany may be described as a condition of localized hypertonicity and characterized by intermittent spasms of certain groups of muscles without loss of consciousness.

It can scarcely be regarded as a distinct disease but rather as a syndrome of disturbed function occurring under a variety of circumstances. The fact that there are a dozen or more types of tetany described in the current literature is sufficient evidence that the underlying cause is not clearly understood. This state of uncertainty is in spite of an enormous amount of experimental work which has been in progress for a number of years.

In order to present intelligently certain phases of this subject, it is necessary to refer briefly to some of the known facts concerning the pathogenesis of tetany. Today there are three main hypotheses, none of which entirely satisfies the varied manifestations of the diseased entity. They may be spoken of as the endocrine theory, the calcium privation theory and the theory of toxic origin.

The endocrine theory, as exemplified by the term tetania parathyreopriva, has been recognized for many years. The earlier thyroid surgeons were familiar with the train of convulsive symptoms which followed complete removal of goitre although they did not appreciate its significance. The striking similarity of the various tetanies to this type following removal of the parathyroids tempted many to seek a common pathogenesis in the deficient glandular secretion. This hypothesis, however, as a sole factor has been largely discarded because of negative histologic findings in the great majority of necropsies on cases of tetany, as well as the frequent presence of glandular changes in patients dying from other causes without any history of tetany. On the other hand, there is sufficient experimental evidence for believing that the parathyroid glands are intimately connected in some metabolic way with the production of the typical attacks.

The theory of toxic origin is a broad one and includes not only the influence of certain metabolic derivatives but also infectious processes of unknown sources. The nature of the acid base upset in tetany is controversial as both acidosis and alkalosis have been observed. Wilson, Stearns and Thurlow stated that there is created during an attack a condition of alkalosis which is rapidly followed by acidosis. Critchley has shown that nitrogen metabolism is seriously involved, giving rise to an increased excretion of nitrogen and creatinin as well as the appearance in the blood stream of highly toxic bodies, notably methylguanidine and guanidine. When the latter is injected experimentally, symptoms indistinguishable from parathyroid tetany are produced. Strangely enough, guanidine tentany is relieved by calcium. Based on these observations, Paton and Findlay assumed that the function of the parathyroids lay in the guanidine metabolism and the control of muscle tonus. Under this theory the role of the calcium reserve was to render toxins innocuous either by direct combination or by decreasing the permeability of the tissue cells. This theory, however, does not explain the changes in the acid base equilibrium in tetany nor the

*Read by title before the sixtieth annual meeting of the Medical Society of Virginia, at Charlottesville, Va., October 22-24, 1929.

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rapid production of tetany by over-ventilation of the lungs.

The calcium privation theory formulated by MacCallum and Voegtlin in 1908 has received the widest recognition up to the present time. It was assumed that since convulsive seizures like those of tetany could be produced by deficiency of calcium in the body, and, furthermore, that the symptoms of parathyroidectomy could be relieved by the administration of this mineral, calcium deficiency was the cause of the disease. The defective calcification of the bones and teeth following parathyroid deprivation and the frequency of tetany occurring during pregnancy and prolonged lactation lend weight to such an hypothesis. The strongest advocates of this theory are Howland and Marriott, who maintain that when the blood calcium falls from a normal of 10 mg. to 5 mg. per 100 c.c., tetany develops regardless of other conditions. These observations are highly suggestive, but a number of facts may be cited to render this theory as a sole cause of tetany untenable. Thus, in cases of rapidly produced experimental tetany, such as gastric tetany following ligature of the pylorus, there is no reduction of the blood calcium. MacCallum has shown that when the pylorus is obstructed and the gastric juice is constantly removed by lavage there ensues a plasma chloride deficiency and the animals rapidly develop tetanic convulsions. Calcium injections are not effective, but saline transfusions cause a prompt disappearance of the symptoms. In other diseases, such as diabetes, the calcium level may fall considerably without tetany resulting. Finally, may not the low calcium figure be the result rather than the cause of tetany? Although the evidence in favor of the calcium theory is striking, the most probable explanation of the beneficial effect of calcium on the nervous system is that it behaves chiefly as a sedative, reducing the excitability of the nervous system—an action which it is known to possess.

A symptom common to all types of tetany, regardless of its cause, is a spasm localized in certain groups of muscles. It is conceivable that these contractions are nature's method of developing a large amount of lactic acid rapidly in order to neutralize an excessive alkalosis, but no satisfactory explanation of the selective involvement has been offered. A physiologic corollary may be considered in this connection. Small muscles are under normal conditions in a higher tonic state than the larger groups and contain a relatively greater amount of glycogen. When some systemic intoxication develops, it is possible that these more highly sensitized muscles will respond more promptly, thereby tending to restore a balance of the acid-alkali ratio. Upon this basis we may assume that the sensitive and highly developed muscles of the face, hands and feet are more susceptible to stimulation and hence are commonly involved in the majority of cases of tetany.

There is another group of cases, however, which, for want of a better term, may be classified as visceral tetany. Abdominal pain is an outstanding symptom and of greater magnitude than the accompanying spasm of the hands and feet. In this type of tetany there are intermittent painful spasms of a colicky character which may simulate many of the inflammatory conditions in the abdomen. Langenskiold has reported six cases, Kaufman one, and the writer has seen four instances of this type. Doubtless many others have made similar observations but they have not been recorded in medical literature. In the cases reported by these authors no corroborative roetgen ray studies were made.

The first case of the writer's series was originally diagnosed intestinal obstruction, but with the appearance of a spastic involvement of the hands and feet a true gastric tetany was recognized, which at operation was found to be due to a benign pyloric occlusion. The second case occurred in a pregnant woman who, in addition to the obstetrical hand and carpopedal spasm, had intermittent painful abdominal contractions which were relieved by calcium therapy. The third case was a young man who complained of recurring abdominal pain, numbness and spasms of the extremities. Physical and laboratory examinations, including X-ray studies of his gastro-intestinal tract, were negative. The administration of Collip's parathyroid caused prompt disappearance of his symptoms.

The fourth case was of unusual interest and, on account of certain unique features, is reported in detail:

A white woman, age 26, entered St. Elizabeth's Hospital with a diagnosis of intestinal obstruction. She was the mother of an infant whom she has been nursing for one year. Her

symptoms began about five months before admission and consisted of a sensation of tightness in the lower chest. Later she began having cramp-like pains in the epigastrium about one hour after meals and during the night. Associated with these symptoms were twitching of the face, numbness of the arms with flexion at the elbows and adductor spasm of the thumbs. These contractions would last for an hour or more at a time. She has lost twenty-five pounds and has grown progressively weaker and more nervous.

The physical and laboratory examinations were not conclusive, but were strongly indicative of tetany with visceral manifestations. The roentgen ray report of her gastro-intestinal tract by Dr. F. M. Hodges gave the following information:

"Plate over the abdomen negative.

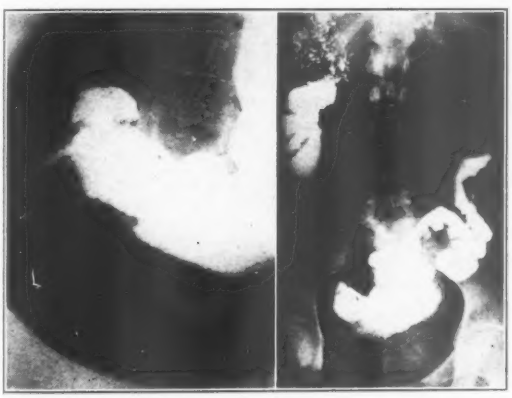

Fig. 1. Fig. 2.

Fig. 1.—Normal contour of stomach and duodenal cap photographed during an attack of tetany (Dr. F. M. Hodges).
Fig. 2.—A 6-hour examination. The stomach is empty but none of the material has reached the large bowel. There is some barium in the terminal ileum, but there is also a considerable amount in the upper left side of abdomen in the small bowel at this point (Dr. F. M. Hodges).

"Oesophagus, stomach and duodenum negative. Six hour examination—the stomach was empty but none of the material had reached the large bowel. There was some material in the terminal ileum but there was also a considerable amount in the upper left side of the abdomen in the small bowel at this point. At the end of 12 hours, the meal had progressed only to the cecum. The cecum is low down in the pelvis and very much enlarged. A barium enema showed a normal colon." (Figs. 1, 2, 3, and 4).

These observations were made during one of the attacks, as described above. On account of the clinical evidences of tetany, a second roentgenological study of the gastro-intestinal tract was made by Dr. Hodges during a quiescence of the symptoms on the following day. It showed "no delay in the progress of the barium and none of the striking features noted in the previous examination were present."

In view of these findings, a tentative diagnosis of visceral tetany was made. On account, however, of the severity of the cramps and the possibility of some associated surgical lesion, an emergency laparotomy was performed by Dr. J. S. Horsley. The stomach and duodenum appeared normal but the gall-bladder was small, thickened and contained stones. The small intestine was explored throughout. *About the middle of the small bowel there was a very marked peristaltic contraction which reduced the intestine to the size of a pencil for a distance of about two or three feet. Above this area the spasm was strong but not so marked.*

The appendix was removed and was found to be six c.m. long and slightly adherent. The mucosa appeared normal except at the tip where there was a stricture. The gall-bladder measured nine by three c.m. There was evidence of many adhesions and the wall was greatly thickened, and there were six gall-stones about 1/3 c.m. in diameter. On section the walls showed some areas of sub-acute inflammation.

In brief, here is the record of a lactating mother with clinical evidences of tetany and intermittent attacks of severe abdominal pain. Roentgen-ray examinations during an attack revealed a spasm of sufficient severity in the small intestine to cause a partial obstruction. Subsequently, during a quiescent period, a second barium meal was given which showed a normal progress. At operation a very much thickened gall-bladder with stones was found together with a most remarkable spastic condition of the small intestine. Following the operation, the patient had several attacks similar to those described in her pre-operative history, but since the administration of calcium there has been no recurrence now for more than a year.

The chief interest in this particular case lies in the significance of the abdominal pain. Colicky pains in the upper abdomen recurring in intermittent attacks are notoriously indicative of gall-bladder disease and, when stones

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are actually found at operation, it would seem to be sufficient evidence to establish an unmistakable diagnosis. Yet there are certain other factors which would appear to offer a somewhat different etiological basis for the abdominal symptoms.

We are in the habit of thinking of abdominal pain or spasm as a purely local manifestation. Its frequent occurrence in local conditions, such as trauma, inflammatory processes, neoplasms, etc., are generally and satisfactorily explained on the basis of an autonomic activity of the ganglia implanted in the digestive tube. Following Mackenzie's classic monograph on "Symptoms and their Interpretation," we have gone a step further and have learned that spasms in parts distant from the lesion may be produced reflexly through the vegetative nerves, an experimental observation which has now become an established fact. We also recognize that reflex spasms may originate from organic lesions outside the alimentary canal, such as diseases of the central nervous system, pelvis and other organs.

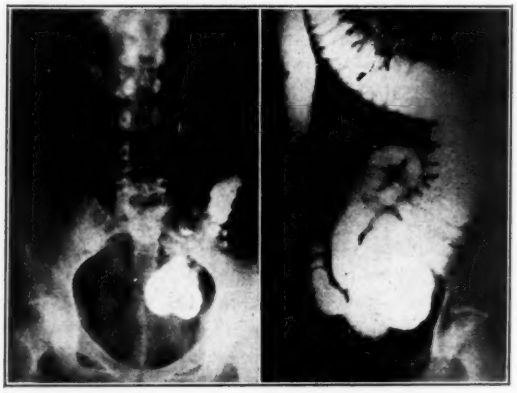

Fig. 3. Fig. 4.

Fig. 3.—At the end of 12 hours, the meal has progressed only to the cecum. The cecum is low down in the pelvis and very much enlarged (Dr. F. M. Hodges).
Fig. 4.—Normal colon as shown by a barium enema (Dr. F. M. Hodges).

Aside from these well known considerations of abdominal pain, we are confronted with other types which may be termed systemic in origin. We are familiar with gastro-spasms or entero-spasms as a part of a functional neurosis and also with the painful board-like abdominal rigidity arising from infections with B. Tetani, strychnine poisoning, etc., but metabolic disturbances, such as tetany, are not usually included among the causative factors in abdominal pain. It has been assumed that when abdominal pain has coexisted with other evidences of tetany a visceral spasm has taken place, but no tangible proof of this condition, or the location of the contraction, has been previously demonstrated.

In the case under discussion we were particularly fortunate in having roentgen studies made during the attack, which showed an actual obstruction of the barium meal in the small intestine. As demonstrated by a subsequent roentgen examination, this obstruction was of a spastic type, and not of an organic nature, recurring as a part of the clinical picture of a generalized tetany.

The question naturally arises as to the probable role of the cholelithiasis and cholecystitis in the production of the abdominal symptoms. If our first premise, as stated in an earlier paragraph, is correct, namely, that muscles of a higher tonus are most likely involved in tetany, a plausible explanation of the involvement of the abdominal viscera may be found. Following Mackenzie's studies, we know that when there is an exalted viscero-motor reflex as brought about by localized inflammatory lesions, the muscles supplied by this irritable focus in the cord maintain a higher tonicity, and are, therefore, more susceptible to any chemical or metabolic changes which may occur in the human mechanism. Upon this basis we may presume that those cases of tetany which manifest abdominal symptoms may do so because of some associated focus sufficient to lower the threshold of stimulation. In view of the fact that the attacks continued after the removal of the gall-bladder, but disappeared following the institution of tetany therapy, it would appear that the cholelithiasis was only a secondary factor in the production of symptoms.

Summary

A record of the clinical history and roentgen findings of a patient suffering with visceral tetany is given. Pictures were taken during an attack which showed an obliterative spasm of the small intestine, but were normal when repeated during a quiescent period. At operation the ileum for a distance of more than 50 c.m. was found contracted to the size of a lead-pencil with no evidence of any organic changes. A cause of abdominal pain in tetany is thus demonstrated.

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Medical Arts Building.

DISCUSSION.*

DR. JULIAN M. ROBINSON, Danville: You have just heard a rather unusual subject handled in a way which was not only interesting and instructive, but which must excite your admiration for the careful and intelligent study which was necessary for the presentation of such a manuscript.

The essayist has gone to the bottom and brought this question out of the darkness and placed it before you, both by word and picture, in such a clear and convincing manner that the cobwebs, so to speak, have been brushed away.

The literature upon the subject of abdominal tetany abounds with theories but the paucity of cases reported has served to emphasize not the fact that there has been a scarcity of this condition but rather a failure to place upon the symptom complex its true significance. We have been too prone in the face of abdominal pain to ascribe it to the more usual causes, disregarding, perhaps, the associated symptoms, and center our attack upon an inoffensive gall-bladder, a much maligned stomach or an appendix curled up innocently in its rightful bed.

Do not forget the two chief points which the author has emphasized in his paper, namely, might not the lowered calcium content be the result rather than a cause, and the relief obtained by its exhibition be due to the lessened nervous excitability, an action, as he states, it is known to possess?

His second point is that abdominal pain can arise from visceral tetany and the cause of this pain may be due to an actual spasm of the small intestine itself.

In a series of experiments conducted in 1909, in Baltimore, and further pursued in 1917, in New York, by MacCallum and others, and reported in the *Johns Hopkins Hospital Bulletin*, Vol. XXXI, No. 347, the question of pyloric obstruction in relation to gastric tetany was thoroughly gone into and certain conclusions arrived at, but, though they gave clear evidence that a certain chain of events followed such an obstruction, they did not necessarily give an explanation of gastric tetany in the human being.

It has been observed that when the pylorus was completely obstructed and the stomach frequently washed out, an animal wasted rapidly and died in a few days, usually with violent convulsions which were not precisely of the same nature as the twitchings seen in parathyroid tetany.

The muscular rigidity with vibrating clonic twitchings and extreme tachypnoea were lacking. Instead, the rather apathetic animal usually lies quiet until seized with a violent universal convulsion, which throws the body into extreme and rigid opisthotonos with abundant salivation and attempts at vomiting. After this it sinks into a kind of coma with slow deep respirations.

Without going into the more technical details of these experiments with the numerous chemical changes, let me present the conclusion, namely:

When the pylorus is obstructed and the gastric juice with its hydrochloric acid is constantly removed, there ensues a decrease in the chlorine of the plasma. There is a consequent increase in the alkali reserve which becomes extreme

The electrical excitability of the nerves is in general heightened, and there are spontaneous twitchings and in most cases violent convulsions, which lead to death.

All of this can be prevented by constantly furnishing a large supply of chlorides.

The convulsive movements are not exactly like the twitchings of the tetany of parathyroidectomy, in which no heightened alkali reserve was found, but they can be produced by the injection of sodium carbonate or bicarbonate.

Let me present briefly a case which I was fortunate enough to see recently which is analogous to the case presented in detail by the author and which bears out his contention.

Female, teacher, age 27. Had been treated by a neurologist in Chicago, a chiropractor in Kansas City, as osteopathist in Scranton, Penn., and a homeopathist in Philadelphia, and was still able to walk erect and recite her encounters.

Her symptoms began about two years ago, when she noticed that after eating she experienced a feeling of nervous apprehension which seemed to emanate from the pit of her stomach.

This became so annoying that she gave up her work for three months and rested, during which time she was almost entirely relieved. On resuming her work, however, the symptoms returned and gradually became more frequent and more pronounced until it developed into cramping pains in her stomach, coming on in the beginning shortly after the ingestion of food.

Later on she began having them during the night, and would awaken to find her left hand clinched and left forearm rigidly flexed, with some twitchings about the facial muscles and stiffness in the lower left leg.

I first saw her in my office Octobeth 5th, and ordered her to the hospital the following day for examination and observation.

She had one of these attacks during the night but it had passed off before she entered the hospital the following morning.

Gastro-intestinal pictures were made and the report was in substance, gastroptosis, enteroptosis, cecal stasis and a marked distention of the ileac portion of the small intestine.

The diagnosis was chronic appendicitis with intestinal tetany. She was operated on October 18th last, and a chronic adherent appendix was found with adhesions covering the head of the cecum. The most interesting condition, however, was the appearance of the ileum. For a distance of ten or twelve inches from its junction with the large bowel it was collapsed and had a lifeless grayish look, and was about one-third of its normal calibre, while the small intestine just proximal to this section was markedly distended.

The appendix was removed, the cecum mobilized and the collapsed portion of the intestine ironed out.

*Prepared in advance of meeting and presented with paper for publication.

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In the interim between her admission to the hospital and her operation, she was given calcium chloride 15½ grs intravenously every other day for four treatments. No other medication was given in an effort to determine just how her nervous symptoms would respond to this.

Her high nervous tension disappeared almost over night and she became more composed, more relaxed, more normal and more like herself than she had since the inception of the trouble.

The diagnosis and handling of this case was influenced no little by the paper you have just heard, to which I had access at that time. I am much indebted, as I know you are, to the essayist for the presentation of this subject in such a light. I trust we will be favored with a further and fuller report by him as he pursues his observations along this line.

EXPERIENCE WITH OLD TYPHOID VACCINE IN THE TREATMENT OF FOCAL INFECTIONS.*

By CLARENCE PORTER JONES, M. D., F. A. C. S.,
Newport News, Va.

In 1914, Ludke, as we recall, used deuteroalbumose as an injection for the treatment of disease. A little later Schmidt injected cow's milk for the treatment of eye infections.

Since that time there have been over two hundred investigators and research workers who have studied the parenteral injection of albuminous substances for the treatment of eye infections. That this proved to be a highly valuable aid to therapy is borne out by a wellnigh unanimous enthusiasm on the part of these men as exhibited in their reports. From personal experience, we have found that the intramuscular injection of cow's milk, 5 to 10 c.c., in patients suffering from deep inflammations of the eye, as cyclitis, choroiditis, iritis, as well as specific ophthalmia, corneal ulcers and traumatic injuries, is of decided value. We are absolutely certain that we have saved eyes that would otherwise have been lost. Experiment has been made with other albuminous substances, as vistosan, yatren, caseosan, novoprotin, lecithin, etc. We seem to find that in each instance the investigator either said flatly, or intimated that none of these had any value which cow's milk did not have.

Now, how does this substance act—the injection of cow's milk into the muscles of the gluteal region—to cause prompt arrest of a severe ocular inflammation? Few have been bold enough to offer an opinion. Some ten or more state as a fact that there is a marked increase in the leucocytes, polymorphonuclears predominating. Franke and Loeb say that it is caused, first, by the production of fever; second, by an affinity for the spleen, bone marrow and lymph nodes; third, a focal reaction in the area of the lesion.

Weichardt and Schmidt believe it to be "protoplasm activation." Bier says "irritative therapy." The truth of the matter is, it is a subject for future biologic study.

The use of cow's milk, whether raw, pasteurized, water bath treated, or boiled, produces a violent reaction—chill, fever, and a feeling of malaise for about twenty-four hours. This extreme discomfort is about its only drawback, and for this reason it is used less often than it would otherwise be. We have often wondered why this had not been generally used for focal infection treatment in other than the eye. Why have there not been others save oculists to take up the subject of foreign protein parenteral injections? We know that each serum and vaccine contains albumen, and that albumen seems to be the base. Why, then, do not others make use of this proven remedy? We confess to the lack of courage to try it in other fields until Dr. Foy Vann, of Norfolk, informed us early in March that foreign protein therapy is valuable in treating any infective focus, especially "left over infections," as he expressed it, and that the protein which produces the least reaction, yet seems to be as valuable as any, is old, out of date typhoid vaccine. The occasion of this interview was the consultation over a young girl whom we had cured of stiffness in shoulders four years ago by tonsillectomy. About two years ago she had a stiff neck which was cured by the extraction of an abscessed tooth.

During October, 1918, the girl referred to above was ill in bed for a week from pleurisy. Upon recovery she was left with painful knees, causing severe pain on going up steps. Dr. Vann advised giving her subcutaneously typhoid vaccine, old, fifteen hundred million c.c. standard, four minims, increasing the dose one minim every third day as long as necessary, using judgment as to how much the increase should be. We did not give more than one c.c. at a dose. In thirty days she was perfectly well, and is so at this time.

There also appeared another patient who had consulted Dr. Vann, a lady thirty-two years old. Since July, 1924, she had had knee

*Read by title before the sixtieth annual meeting of the Medical Society of Virginia, at Charlottesville, Va., October 22-24, 1929.

pains which were relieved by nasal sinus operations, tonsillectomy, and by the extraction of teeth. From the last treatment, i. e., the extraction of two abscessed teeth, which occurred September, 1928, she had not received full measure of relief. She suffered much at times on going upstairs, also in stooping. A thorough search with the aid of the X-ray failed to reveal any focus. Inasmuch as the first case mentioned was progressing nicely, we put her on typhoid vaccine, old, with very satisfactory results.

Encouraged by the success in these two cases, we immediately procured a large quantity of typhoid vaccine, old, and made it available to all physicians in the community. The kindness and patience of these friends in trying the remedy is the reason for these few remarks. It has been used by them in cases of left over infections, or, in other words, in those cases where there is no known existing focus, or where the focus, or foci have been removed as far as it is humanly possible to do so. The results have been quite gratifying; nearly every patient having increased a few pounds in weight. They have each experienced a feeling of well being, with relief of pain in muscles. The remedy has been proven to be of marked value in the treatment of vague muscle pains in the aged. Reactions have been very slight, in many cases not being noticeable. There was some malaise in one case, a man sixty years old. This patient avows that all vaccines and serums make him sick; therefore, the psychic element was likely present. In lumbago and shoulder pains, several cases were very promptly relieved. In order that this study might not undermine surgery, thus doing harm, no case was treated until the cause of the muscle pain or other pain, in so far as it was possible to locate same, had been removed. As a post-operative treatment it is very valuable.

The number of patients treated by these physicians in cooperation with us is sixty-four. In fifty-seven, there is definite benefit, and the large majority could be termed cured. The remaining seven do not show any particular benefit. None, however, has been made worse, and the treatment seems to be perfectly harmless.

We feel that the use of typhoid vaccine, old, is a remedy which, if used generally in post-operative cases and non-operable muscle pains, will produce results satisfactory in a vast number of patients. We are prone sometimes to run wild over spectacular things, like high sounding mechanical and electrical aids of very doubtful value, while we overlook "acres of diamonds" right under our feet.

MEDICAL JAZZ—A PLEA FOR HARMONY IN MEDICINE.*

By ROY K. FLANNAGAN, M. D., Richmond, Va.
Assistant State Health Commissioner.

A Divine Commission

Lord Francis Bacon, in his treatise on "The Advancement of Learning," critically examines the practice of medicine of his day, diagnoses its ailments, and prescribes treatment that is not only applicable to today's sadly afflicted medical profession, but appears to be its only hope. This great scholar, poet, scientist, philosopher, lawyer, and medical author, says:

"The poets did well to conjoin music and medicine in Apollo, because the office of medicine is but to tune this curious harp of man's body and reduce it to harmony."†

He says of the physician's function as a prolonger of life, "that it is the most noble of all for if it be supplied, medicine will then not be taken up with sordid cures, nor physicians only *honored for necessity*, but as the dispensers of the greatest earthly happiness that can be conferred on mortals."

If Bacon here expresses a thought worthy of consideration, it would be well for the modern medical man to check up on himself and observe whether his own attitude towards his "noble art" and toward the public is in line with the great humanitarian principle enunciated here by Bacon, or whether the sum total of his efforts in tinkering with the strings of the "harp of life" is simply the promotion of jazz.

The Jazz Era

We are apparently passing through an era in which no reputation, however well established, no belief, however sacred, no custom, however deeply rooted, and no institution, however dignified, but has been subjected to a process of jazzing and everybody is doing it. Jazz exponents, votaries and apologists, are as plentiful as gasoline stations, exposed

*Read by title at the sixtieth annual meeting of the Medical Society of Virginia, in Charlottesville, October 22-24, 1929.

†Advancement of Learning, Basil Montagu's Works of Lord Bacon, Book II, page 203.

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knees and chewing gum—and even the regular medical profession, the last fortress of dignity and conservatism in a topsy-turvy world, seems now disposed to add its note to the negroid syncopations and their accompaniments which threaten to jar loose the restraints imposed by a millennium of civilized progress.

It would seem that the historical perspective of the doctor ought to have saved him this humiliation, for whatever be the reaction of the man in the street whose soul is stirred by the radio's rendering of the "Congo Blues" or "The Red Light Razz", the physician is aware that these noises are nothing new, but are simply a throw-back to the time of his ancient progenitor, the jungle medicine man. He well knows that weird nonsense accompanied by suggestive dances to the thumping of the tom-tom and the shaking of the rattle-box have been the stage properties of the witch doctor since before the dawn of civilization. A well informed doctor, therefore, ought not to have much patience with such expressions of degenerative impulse; least of all should he wish to adopt them. Historically, he passed that point five hundred years before the Christian era when Hippocrates, of Cos, laid down the law of "modern" medicine.

Competitors

Illustrating the doctor's situation, Bacon again appeals to the classics, observing that "the poets were clear sighted when they made Aesculapius the physician, and Circe the witch, brother and sister, both children of Apollo, for in all times in the opinion of the multitude, witches and old women have had competition with physicians, yea, we see that the weakness and credulity of men is such that they often prefer a mountebank to a learned physician." With this tendency to combat a tendency only a little less apparent now than in Bacon's time, since it is not alone the prerogative of the ignorant and poorly placed in life: physicians today will, if they are wise, remember their spiritual allegiance to the second highest deity among the five celestial gods of ancient Greece —god of light, of music and of medicine, of poetry and of rhetoric, the divine Apollo* and be in a very real sense exponents, so to speak, of classical music, abhoring jazz with all it implies of disharmony, retrogression, charlatanism and self-seeking opportunism.

*"Mine is the invention of the charming lyre;
Sweet notes of heavenly music I inspire
Medicine is mine; what herbs and simples grow
In fields, in forests, all their powers I know,
And am the great physician called below."
(Ovid Met 1).

Chords and Discords

Complete and abounding health, uniform throughout the body politic, resulting in the fullest expression of vibrant life, is the theme of the symphony which the true physician would make possible by his labors on the harp of humanity. Sadly out of tune he finds it and even more distressing at times in its effects is his own uncultivated ear. It is in the hope of stimulating a desire for higher order of medical culture and a fuller appreciation of the mission of the doctor as an exponent of true harmony in the general medical world that this excursion into the classics of the profession of medicine is taken.

In view of much that is being said by medical men in positions of authority, some of whom claim to be spokesmen of organized medicine in this country, and the inharmonious reverberations that have followed, it would seem that the foregoing reminder and admonition is peculiarly appropriate at this time. It is impossible to keep jazz under cover, and thoughtful men of every walk of life are pondering upon the discordant notes so evident in the medical choir.

The Performance

The howls about State medicine, the growls over the encroachment of public health practice upon the domain of curative medicine, the groans from both the general profession and the public over "group medicine" and its Henry Ford-like efficiency and profit, the squeals as the breach widens between the specialist and the private practitioner, the actual explosions consequent upon the establishment of pay clinics designed to lower the cost of medical care, the battle din against the creation by the government in the United States Deparment of Labor of a bureau for the reduction of infant and maternal mortality, the clamor of the country doctor and the country populace for a better place, medically speaking, in the sun, and through it all the minor note of despair from the increasing number of self-respecting wage earners in every city in the land bankrupted in large numbers by medical bills they cannot hope to pay—all combine to fill the air with sound in different keys which is jazz and nothing else.

If this were all, the public which loves to

witness a noisy domestic scrap, and is more or less familiar with slap stick scenarios and inured to syncopating discords, would look on with delight, grin and gossip about the row, and then go on about its business. But unfortunately this is not the whole story.

Rival Orchestra

The irregular, the quack, the cultist, the religious healing fakir and the pathist of every kind and condition, all modern prototypes in greater or less degree of the witch doctor of the jungle, capitalize the medical row, set up a rival orchestra and with some show of reason but little truth, appeal to the public for consideration with noisy mouthings no whit more discordant, though better organized, than those the medical profession in its strife gives forth.

The poor bewildered public accustomed to buy everything from pins to opinions under the impact of high pressure salesmanship, more often than not takes the quack and lets the doctor go. "Regular medicine" cannot compete with such specialists on their own ground and it ought not to try, for this group illustrates perfectly the ass in the fable of "The Ass in the Lion's Skin," giving forth a sound and nothing but a sound, the canny fox to call the raucous bluff being conspicuous for his absence.

The physician should not fool himself with the pretense that he has less human nature than other people and over-emphasize his own high and mighty sentiments, for there is more than a suspicion growing that the same sort of self-interest so blatantly apparent in the advertising specialist's appeals to the public is not wanting entirely from the loudly argumentative outpourings of certain conspicuous medical men.

Under Tones

It seems to be true that the fundamental inspiration for all of the discordant notes listed above is self-interest and fear. The invoking of public spirit, altruism, medical honor and prestige appear rather unconvincing camouflage. When self-interest is plain, every other motive is discounted, and unfortunately for him its exhibition is not more lovely in the physician than in the quack.

It is clear, however, to discriminating folk that the interest of the public is bound up in the interest of the doctor, but people are not generally discriminating, and where they are, they well know that in matters affecting their own interest doctors are human too.

It would be foolish indeed for anyone to inveigh against self-interest, *per se*, for it is the moving force in all material progress. It has caused the doctor to become indispensable and prosperous in his position as a curative agent and it must be invoked to save him to society in honor and dignity as disease and disability become less and less prevalent.

Classic Music

The doctor, however, must demonstrate by public service, not by word battles, that he deserves to survive. Enlightened self-interest in my judgment demands that the doctor stick to the ancient principles that have alone brought honor to his name,—to return to our analogy—he should not permit himself to be drafted into the chorus of anything less than grand opera. Let him stand for true fundamentals and be the exponent and patron only of music that uplifts the soul and blesses mankind. It is here that Lord Bacon offers another wise suggestion, he states that for the doctor "one thing of greater use than all the rest is needed, a genuine and active philosophy whereon to build the science of physic." Without such a philosophy the doctor will indeed "be taken up with sordid cures and be honored only for necessity." Without this philosophy the jazz spirit is sure to prevail and his status as an individual working on individuals for individual reward take the most conspicuous place in the physician's thought. With such a philosophy clearly apprehended, harmonious relationship with his fellows in all aspects of the common task becomes obviously imperative and the public interest appears with inexorable logic as the larger duty before him.

Harp Strings

In trying to make clear his meaning as to an active philosophy for the doctor, Bacon arranged knowledge respecting the body under four general divisions, — health, strength, beauty, pleasure, four strings as it were to the harp of Apollo; and the health aspect of this knowledge, the aspect with which the physician has specially to do, he says is threefold: (1) The preservation of health, (2) The cure of disease, (3) The prolongation of life.

He thus places cure of disease in between the two public health principles which are now

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comprehended in modern terminology under Prevention of Disease and the Promotion of Health and giving a two out of three preponderance to public health practice in the tripod of medical philosophy, or to return to our text —two strands in the three ply medical string to Apollo's harp. What else but jazz can result when all three strands in one string do not coordinate smoothly so as to give forth a constant note?

Harmony

Medicine, therefore, is one; whatever its component elements, harmony is an essential principle of it, discord is disgrace. The hindering of waste by the prevention of disease, the skilful application of science to the repair of tissue when repair is needed, and the promotion of bodily well-being to advanced age is the medical man's task. However, he may specialize, he cannot specialize outside of this program and be true to the philosophy of his calling. He may know less about one aspect than he does of another; he may be much restricted in the scope of his contacts with the public but in the foreground of his mind complete and continuous bodily health for his patient is the end to which his immediate efforts are bent. The eye specialist cannot simply consider the eye, nor the orthopedist the bones and joints; they along with the surgeon in all his other manifestations must coordinate with the internist, the psychiatrist, the urologist, the dermatologist, "et id omne genus," and as a medical gentleman and a scholar, not to mention his status as a citizen and a patriot, the doctor must consider the relations of his patient to the community and neglect no advice or precaution that will tend to keep the ailment he is then treating from recurring or becoming more prevalent.

Cheap Music

Not to do this puts him in the class of the patch-work artist and makes of his profession a trade. Medical ethics and the best traditions of his art impel the regular physician to attack not only disease but the causes of disease and this makes of him always a martyr to his own efficiency and honorable conduct. Disease is unsocial and no institution deserves to continue to exist that depends for its continued existence upon a principle destructive of society. Disease should not be the doctor's stock-in-trade. Health ought to be the atmosphere in which he moves and thrives. Some way should be found by which the public may cause it to be as profitable for the doctor to live in the gradual disappearance of disease and disability as he now is able to do in its continued presence. The solution of this problem, and it is a problem that involves the future status of a truly noble profession, is a task for medical statesmanship, and such statesmanship appears to be woefully lacking in prominent places where it should be found.

In other words, the jazz spirit with all of its discordant, retrogressive, individualistic implications has infected even the citadels of science and the rank and file of the medical group must try to act as though they had never heard good music or lose standing with their fellows.

The Swan Song

Perhaps it is too late to stem the tide of medical jazz. If so, then it is time to take another leaf out of Bacon's book—again hear him. "Physicians say to themselves in the words of Solomon, 'If it befall to me as it befalleth to fools, why should I labor to be more wise?' and, therefore, one cannot greatly blame them, that they commonly study some other art or science more than their profession. Hence, we find among them poets, antiquaries, critics, politicians and divines (sic) and in each more knowing than in medicine. . . . They thus turn away from medical art, perhaps as they are men—no doubt it is because they find that mediocrity and excellency in their own art makes no difference in profit or reputation."

Jazz is the apotheosis of the mediocre. Talented physicians of Bacon's day apparently including Bacon himself refused to practice medicine in order to escape it. God forbid that to save his self-respect and his sense of Divine harmony the present day ethical physician shall be forced to do likewise.

SOME CASES.*

By CHARLES S. WEBB, PH.B., M. D., Bowling Green, Va.

Some cases which may be of interest to the profession are herewith related:

Case 1.—Mr. C., age 40, strong, well-built, a teacher by profession, was taken suddenly with a severe cough, with copious expectoration, temperature normal. The cough was

*Read by title at the sixtieth annual meeting of the Medical Society of Virginia, in Charlottesville, Va., October 22-24, 1929.

unmanageable, expectoration was yellow, and of a foul, disgusting odor. I confess that I was puzzled. Two other physicians were called in but could not agree on a diagnosis. One said the patient had gangrene of the lung and would not live twenty-four hours. I was determined to get at the bottom of it, if possible, so I made a thorough analysis of the expectorated matter. To my astonishment I found *bile*. However, I wanted to prove the case. I remembered that Dalton's physiology, as taught by Dr. James L. Cabell at the University of Virginia, claimed that cat's bile would respond to the same test as human bile. So I tried cat's bile with the same test and with the same result. I then felt perfectly sure of my diagnosis. It was a case of abscess of the liver, discharging through the lungs. So I hastened to inform the grief-stricken family. They had already told the professor "goodbye," expecting him to drop off at any moment. There was great rejoicing when I informed them that his chances for recovery were very good. He soon came back to his former good health.

Case 2.—Mr. R., age about 70, in vigorous health except that he felt himself continuously annoyed by attacks of indigestion, much of which I believe was caused by irregular eating. Sometimes a long fast and then a very large meal. Was called at night and found this patient suffering from acute pains in the stomach, just below the ensiform cartilage and a little to the right. He was suffering greatly. I at once gave him a hypodermic of morphine and atropine and stayed with him until he was comfortable. I advised his son to take him to a hospital as soon as possible as I was of the opinion that he had gastric ulcer, though I confess that I did not suspect perforation. I was quite sure that the stomach was empty, and that it was not indigestion. At the hospital the diagnosis was cancer of the stomach, but they would keep him for a few days "under observation". In the meantime it became evident that there was fluid of some sort in the pleural cavity. Aspiration brought out a large quantity of pus, from which it was concluded that the patient had at some time had pleurisy. I was satisfied that this was not the case. However, the patient was homesick and had his son phone to me to come and get him. I brought him home in an ambulance, and at his request called Dr. J. Morrison Hutcheson. When Dr. Hutcheson came, I gave him a history of the case in detail, and told him that my diagnosis was perforated ulcer with a resultant abscess. He said that sounded rational, but preferred to take him back to a hospital, so that he might be ready for surgical interference if the occasion should demand it. To this the patient readily consented. He did not rally, and in a few days died. Dr. Hutcheson got the privilege of an autopsy, and wrote to me as follows: "After I talked to you over the phone yesterday, Mr. R. became rapidly worse and died about 5:30 P. M. Dr. Shepherd and I made an examination of the abdominal cavity and found a large subphrenic abscess thoroughly walled in from the rest of the abdomen by dense adhesions, communicating behind the liver and through the diaphragm with the pleural cavity. There were several openings in the diaphragm. The liver was definitely enlarged, but no abscess or tumor in it could he make out. The pyloric end of the stomach was firmly bound in adhesions and when these were separated a jagged perforation one cm. in diameter was located just to the gastric side of the pyloric ring and posteriorly. Apparently the abscess cavity communicated both with the lung and with the stomach as this opening showed no sign of having been sealed. We were unable to examine the lung, so that the question of the origin of the pneumothorax, which appeared a few days ago, was not determined. I suspect that it came from the intestines rather than from rupture of the lung. The surprising thing to me about this case is the time that he was able to live with so much pathology. The infection must have been of a mild type. It is only the second case of perforated ulcer that I have seen survive for any length of time without immediate operation."

Case 3.—Mrs. B., age about 55, long past the menopause, married, never had any children, general health fairly good. Was called twice to see this lady, whom I had never treated before. Each time I found her suffering from what seemed to be an attack of angina pectoris. She certainly had all the symptoms except one—she could lie down without increasing her discomfort. However, the inability to lie down is not an invariable symptom, even in fatal cases. She told me that she had been having these attacks for the past

several years, at intervals varying from a few weeks to a month or two. The diagnosis had been nervous indigestion, or something of that sort, and the only treatment had been for temporary relief, with a warning as to diet. I had my doubts about this, so I looked for something else. The stethoscope revealed nothing; in fact, it rarely does in these cases. There was no suspicion of fatty heart or of arterial sclerosis. I asked about the condition of the teeth. She said they were all right, had been X-rayed and thoroughly fixed up. Nevertheless, I persuaded her to try again, so the teeth were X-rayed under my immediate supervision. We found a piece of root which had been broken off and left there when a tooth was extracted twelve years before. It was well covered by a healthy looking gum and had never given her any trouble. In fact, she did not know it was there. This was taken out and exhibited to her. Now the most comforting part of this whole transaction is that she has never had an attack of angina since, and that was a year ago. This is the third case within two years in which I have seen the attacks disappear following a thorough treatment of the teeth by a competent dentist.

Case 4.—A man about 35, legs enormously swollen from the hip down. Had not been sick at all, and had no acute or chronic disease of any kind that I could discover. Examination showed that the heart had nothing to do with it. Analysis showed that the kidneys had nothing to do with it. Then, what was it? I had a vague idea that may be the liver was implicated in some way. Now I cannot trace the exact process of reasoning which induced me to give him potassium iodide, but I fixed up a solution in water so that he would get ten grains in half a tumbler of water three times a day for several weeks. He was ordered to see me again after the medicine had all been taken. About three weeks after that he came, the swelling all gone, his legs as slim as ever they were, feeling first rate. He had done nothing for himself, except to take the medicine I gave him, regularly, according to directions. What was the matter with him? And how did the potassium iodide effect a cure? Or was it only a post hoc? I confess I don't know.

NOTE:—This paper was on the program for Thursday night at the recent annual meeting of the Medical Society of Virginia. When I found that I could not be present, it was too late to send the paper. I would be glad of any comments on these cases, either through the Journal or by personal letter.

SOME ASPECTS OF THE PERIODIC EXAMINATION.*

By A. A. HOUSER, M. D., Richmond, Va.

There is no phase of medical practice that should elicit more interest from the general practitioners than the periodic health examination. There are a number of persons in almost every community desirous of receiving this service from medical science.

The only thing to prevent the periodic health examination gaining momentum rapidly is the failure of the physician of the community to have a perspective to encourage, to render efficient service in educating the patient to understand his health potentiality, and to use the means made available by medical science that it may be realized.

There is an increasing trend for acute infectious diseases to be less prevalent and, when they exist, not to require as much of the physician's time as formerly. Acute infections are going to be less prevalent when every community has a complete public health unit, and this unit has the sincere cooperation of the local physician.

Some physicians have had a feeling of antagonism to public health activities that would be very shocking if it could all be uncovered and thrown on a screen. This is an easy state of mind to develop if the physician loses the true perspective of his vocation, which is not a business that he is engaged in, but a quest to render service. The periodic examination has no conflict with public health, but activates the community to get a greater benefit from public health.

If individual medicine survives, the major part of its effort is going to be concerned with health rather than, as at present, with sickness. This change, of necessity, will take place slowly. When it is complete there will be a perfect harmony between the physician and the public health organization of the community, the public health organizations acting somewhat as a police protecting the people from infection, the outside forces that destroy health; the physician concerning himself in the main, analyzing the individual and teaching him how to conduct his life that he may not be prematurely destroyed by the inside

*Read at the sixtieth annual meeting of the Medical Society of Virginia, in Charlottesville, October 22-24, 1929.

forces, which are under his control, that destroy health.

On account of there not being a synchronization of medical effort somewhat after this fashion, there is an economic loss each year in this country estimated at $3,000,000,000. Some life insurance companies and industrial organizations are becoming gravely concerned about having this needless waste corrected. Medicine as a whole has not manifested much concern about this stupendous problem.

The larger part of medical effort is directed to the repair of the disorders that are responsible for this great economic loss, making only meager and often no effort to teach the patient to avoid a recurrence of another tragedy of the same or worse nature. The effort that life insurance and industrial organizations have made to improve the health condition of their people has not been as successful as it should have been due to the fact that often the men whom they employed were not interested in health, neither did they possess a teaching vision to transmit the health education to the individual.

The general public in rather large numbers is beginning to realize that it is possible for the physician to render to them a greater service than a prescription to relieve discomfort, and that medicine is not a panacea for health. This mental awakening in a large measure has been occasioned by the general health discussions of the public press. This means of health education has performed a wonderful service in awakening an urge in man for health understanding.

The foundation of health education has to be laid individually. Each individual has to adjust his life to the principles of scientific medicine. Health cannot be achieved by the issuance of a fabricated medical teaching that will fit the individual. The only method by which the problem can be solved is through the periodic health examination and individual education. The physician has the choice of preparing himself to render this more profitable service, or sink into oblivion as the intelligence of his patient develops.

The potential market for the performance of the periodic health examination cannot be supplied even if the number of physicians were doubled. Every individual needs this service each year and would have it if he but knew the benefit it could be to him. I regard five hundred as the liberal maximum number of examinations a physician can perform in a year. The physician who equips himself to do the periodic health examination has chosen a specialty that will never be overcrowded.

Many laymen, as well as physicians, have asked the question: "What benefit can a well person derive from a physical examination?" Many, apparently well, will be surprised at the gross pathology found on their initial examination that was apparently giving no symptoms.

There are physicians who regard the periodic examination only as a means of discovering early pathology. It is desirable for the patient to have knowledge of early pathology, but the periodic health examination should be primarily concerned in pathological tendencies rather than pathological happenings. There is evidence of potential pathology years before real pathology exists, in many cases. If they are sensed and vigorous educational efforts exerted, the great mass of troubles that shorten life and lower human productivity can be averted. Every biological entity possesses evidence of its life habits, both physical and emotional. Man is the easiest of any of the animals in which to observe physical and emotional trends that tend to produce pathology.

The physician who accepts the service of periodic examiner must not only understand a technique of charting pathology; he must know health better than he knows sickness. He must be familiar with habits both physical and emotional that tend to destroy health.

The periodic health examination cannot gain favor with intelligent people unless the physician regards every applicant for examination as an opportunity to render a sacred service regardless of how well he may seem.

The health examination should have a routine procedure more exacting than the examination conducted for the purpose of revealing symptom-giving pathology, though in general they should be similar. There is an opportunity for many laboratory procedures to render a greater service in the health examination than in the examination of the sick. History is more apt to interfere with the constructive health examination than help. All history should be excluded except an opening statement by the patient of how he feels com-

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pared to his conception of how he thinks he ought to feel. This statement need not be accurate, but it should be an honest effort of the patient to reveal the kind of reaction his mind gets from his body.

The health examiner must be concerned primarily with investigations of a physical and observatory nature, and not with help from the patient through question asking. Information gotten from the patient is apt to be misleading, regardless of how earnest and intelligent the patient may be.

There should be developed a democratic relationship between the patient and physician during the examination, though the conversation should not be concerned with the examination at hand. The physician who promotes the cause of the periodic health examination must above all things resolve to tell his patients the whole truth about the result of his examination. To do this, he must make his survey thorough enough to crystallize an opinion that he is not afraid to express. Most tragic mistakes in diagnostic skill are the result of a premature conclusion or not following through an adequate routine procedure. There is nothing so wholesome for the patient's mind as to be convinced that what the physician says about his condition is what he thinks and all that he knows.

The health examiner must regard himself primarily as a teacher. The predominant factor in health realization is health understanding. The only way the individual can have health understanding is through the periodic examination and individual education, directing him in the path of promise and safety that scientific medicine has provided.

In addition to the visible technique, the health examiner must have an invisible technique that reveals the patient's emotional pathology, a conspicuous cause of functional disturbances and physical pathology. Every step of the visible technique has its associated invisible potentiality to reveal some attribute of the patient's emotional make up. The one step in the visible technique that offers the greatest help in the invisible art of emotional understanding is the blood pressure reading. It has a greater potentiality for help in revealing emotional tension that will produce cardiovascular pathology than it has in giving information of existing cardiovascular pathology.

There has been much effective teaching done to emphasize the importance of early diagnosis, especially of cancer and tuberculosis.

There is a pre-pathological setting that usually makes these dreaded diseases possible. Had this been sensed in the health examination and corrected, the chances are these diseases would not have developed.

In the past the attitude towards the sick has been one of sympathy. In the not far distant future, the attitude will somewhat simulate the one we should have for the criminal. We will feel sorry for him in his miserable plight, but every one will know he is sick because he is ignorant and did not avail himself of the privilege of health that medical science has made plain.

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THE RELATION BETWEEN FOCAL INFECTIONS AND ANGINA PECTORIS—A CLINICAL STUDY.*

By JAMES H. SMITH, M. D., Richmond, Va.

About 1920, a man who seemed to present the symptoms of true angina pectoris was apparently relieved of his symptoms by the removal of infected tonsils. After a short while he returned to an unusually active life connected with lumbering operations and has remained well. Since that time I have been impressed with the possibility of a relationship between such infections and the symptoms of angina, and have made consistent efforts to eradicate such infections as could be found. Experience with subsequent cases is the subject of this paper. While the cases are too few in number to justify any conclusion, I think it can be shown that the inquiry is promising.

It is first necessary to define our terms. The chest pains commonly called pseudo-angina, light in character, not referred, unassociated with digestive symptoms or other marked disturbance, unrelated to exercise but occurring, perhaps, as part of a picture such as essential hypertension, are not included, since they are not known to have later developed more characteristic symptoms of true angina. In the cases under discussion, generally speaking, the symptoms were quite as typical in the cases that have not died as in those that have. Time does not permit a presentation of abstracts of each case, but the following may be cited as

*From the Medical Department, St. Luke's Hospital.

an illustration of true angina pectoris:

Since an attack of congestion of the lung in 1919, the patient has had attacks of pain beginning in the right hypochondrium and extending to the left shoulder and down the left arm along the course of the ulnar nerve. This pain has become more frequent. It comes after exertion and usually after meals. It is promptly relieved by rest and by belching gas. Now he cannot walk any distance without experiencing this pain and has to stop for a few minutes, when relief is prompt.

On the other hand, three cases with the symptoms and signs of coronary thrombosis or myocardial infarction have been excluded. As is so likely to occur in this condition, these three patients died during the attack of almost continuous pain. The pain was unrelieved or only partially relieved by nitroglycerin or morphia, there was moderate fever and leucocytosis, and in one a friction rub. Such cases do not usually offer opportunity for attack on focal infections, and if infections play a part in their etiology the chance for dealing with them is almost limited to the period before the myocardial damage is done. The following note illustrates myocardial infarction:

Onset thirty-six hours previously, at 2 A. M., with sudden sharp pain in the epigastrium, which caused him to perspire freely and to become cold and clammy. At this time he was frightened and thought he was going to die. The pain seemed to be substernal and he felt as if he were held in a vise. Later the pain seemed to become a throbbing sensation in his left shoulder and began to shoot down his left arm. A hypodermic of morphia enabled him to get to sleep for a few hours. He was very uncomfortable during the next day, and the following night did not sleep at all, was very restless and the pain was not relieved by hypodermics. He became very nauseated and vomited. The patient did not seem to improve and was brought to the hospital. The temperature range was from normal to 100; the leucocyte count 16,000, with 78 per cent polynuclears. There was electrocardiographic evidence of coronary thrombosis. The patient died nine days after onset of the attack.

Excluding, then, cases of pseudo-angina and cases of coronary thrombosis with myocardial infarction, there were, between 1921 and 1929, twenty-three cases of seemingly true angina pectoris for analysis with reference to the influence of focal infections. It should prove of interest on another occasion to go into the question of prognostic factors other than infections, especially the condition of the heart as shown by symptoms, physical signs and the electrocardiograph, the systolic and diastolic blood pressure, correlating these with the infections found and the results of treatment. At this time, however, the more general data can be sketched only in briefest outline without attempting to relate them to the outcome of the case.

The cases were first seen in approximately equal number during the eight years intervening between 1921 and 1929.

Twenty-two were males; only one was a female.

Ten were in the fifth decade of life; nine in the sixth; three in the seventh and one in the eighth.

In eight the pain was recorded as associated with exercise; in eleven it seemed to come with either eating or exercise.

In seven the pain was not described as referred elsewhere from the substernal or epigastric region; in one it was referred to the right arm; in five to the left arm; and in six to both arms.

In twelve the heart was considered to be not enlarged according to physical examination, X-ray examination, or both; in seven it was thought to be enlarged to a moderate degree; and in one it was grossly enlarged. The aorta was enlarged in three cases in which the heart was not apparently larger than normal.

In nineteen there was no history, physical sign or symptom of decompensation; while in four there was evidence of congestive heart failure, and in two of these death followed.

In thirteen no murmur was heard; in five there was a basic systolic murmur; in two an apical systolic; and in two a basic diastolic.

The myocardial tone was apparently normal in eleven cases; and impaired in twelve.

The electrocardiogram showed minor abnormalities in four cases; slight or doubtful myocardial impairment in three; and definite or gross impairment in five. How far it may be expected that improvement in the subjective symptom of pain will be paralleled by return toward normal of electrographic tracings, I do not know.

It is of some interest to note that of the four cases who have died, three had systolic blood

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pressures between 160 and 200, and diastolic pressures between 100 and 110; while nearly all of those who have not died had lower pressures.

The Wassermann reaction was negative in twenty-two; it was positive in one, but this case has been lost sight of.

While digestive symptoms were more or less prominent in nine cases, there is a striking absence of any positive proof of organic lesion of the gastro-intestinal tract. One case showed X-ray evidence of chronic cholecystitis and chronic appendicitis, but the gall-bladder has been less conspicuous in the series than might have been expected.

One case had cervical sympathectomy done with very satisfactory results.

The advice as to hygiene and mode of life was in principle the same for all of the patients, with allowance, of course, for their respective occupations.

Of the four who died, two were brothers with a notably bad family arterial history; both were cripples, one with hip-joint disease and the other with Pott's disease. One died in a hotel in New York; the other after going to the bathroom against advice during an attack of grippe. The third death occurred in the patient's office, down town, and the fourth died as a hospital bed patient.

TABLE I

History of Local Infections

	1	2	3	4	5	6	7	8	9	*10*	11	12	13	14	15	16	17	18	19	20	21	22	23
Otitis media				*				*												*	*		
Sinusitis																*		*					
Tonsillectomy																		*				*	
Frequent tonsillitis; quinsy													*				*		*				
Extensive extractions for "pyorrhea"					*	*														*			*
Dental abscesses				*													*				*		
Gonorrheal complications												*	*										
Late prostatic infection			*																	*			
Inflammatory rheumatism					*							*										*	

Active Focal Infections

	1	2	3	4	5	6	7	8	9	*10*	11	12	13	14	15	16	17	18	19	*20*	21	22	*23*
Otitis media								†															
Sinusitis														‡					x				
Infected tonsils		x	x	x	†					†	x		†						x				
Pyorrhea		x	x																				
Dental abscesses		x	x	x			x		†	‡	‡				x	x	†		x				
Late prostatic infection								†				‡										‡	
Results	D	I	U	I	U	I	D	U	?	D	I	I	I	I	I	I	D	I	I	I	I	?	I

Symbols: Italics, records or examination not complete, *1*, *10*, *20* and *23*.
* positive history of local infection.
† active focal infection not treated or inadequately treated.
‡ active focal infection partially eradicated.
x active focal infection eradicated.
D died; U unimproved; I improved; ? no record.

Turning now to a consideration of focal infections, the attempt has been made to present the data in graphic form in a series of three tables. While something may be thus accomplished in the way of brevity and a comprehensive view, it leaves much to be desired. It is impossible to indicate in this way the severity of the infection, the time relation between treatment of the infection on the one hand, and, on the other, the onset, persistence or relief of the attacks of angina. But, again, such a detailed account would trespass too much on our time.

The first table shows the history of local infections and the active focal infections found at examination of each patient, roughly the thoroughness of treatment of the infection, and, at the bottom of the table, the result.

The second table shows the same data in more composite form and grouped according to results.

TABLE II

LOCAL AND FOCAL INFECTIONS GROUPED ACCORDING TO RESULTS

DIED				UNIMPROVED			No Record		IMPROVED												
1	7	*10*	17	3	5	8	9	22	2	4	6	11	12	13	14	15	16	18	19	*20*	21	*23*
–		–	*	*	*	*		*		*	*		*	*			*	*	*	*	*	*
			*		*			*		*			*	*				*		*	*	
																				*		
	x	†	†	x	†	†	†	‡	x	x		x	‡	†	‡	x	x		x	–		–
		‡		x		†			x	x		‡							x			
				x					x										x			

Symbols: –records or examination not complete.
* positive history of local infection.
† active focal infection not treated or inadequately treated.
‡ active focal infection partially eradicated.
x active focal infection eradicated.

The third table is a summary of the first two.

The records of examination are distinctly incomplete in four cases, and in two cases the subsequent history is unknown. It does seem, however, that the incidence of focal infections is rather marked even for a group of individuals of middle age and beyond, and the third table seems to justify the remark:

TABLE III*

	DIED		UNIMPROVED		No RECORD	IMPROVED				
Record or examination incomplete.....(–)	1					20	23			
Infection untreated or inadequately treated.....(†)	10	17	5	8	9	13	21			
Infection partially eradicated..(‡)					22	11	12	14		
Infection eradicated.....(x)	7		3			2	4	15	16	19
No active infection.....						6	18			
TOTALS.....	4		3		2	14				

Of the seven dead or unimproved, 5 were inadequately dealt with, as regards infection.
Of the 14 improved, 10 were more or less adequately treated, as regards infection.
*Numerals indicate case number except in the line of totals.

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Of the seven dead or unimproved, five were inadequately dealt with as regards infection, and,

Of the fourteen improved, ten were more or less adequately treated as regards infection.

It would seem, therefore, that, while no conclusion can be drawn from so limited a number of cases, they at least suggest the importance of recognizing and eradicating focal infections in subjects of angina pectoris, more especially since our therapeutic efforts in their behalf are at best unsatisfactory. Under the conditions discussed, radicalism in lesser matters may be, and I believe is, a position of conservatism on the main issue.

McGuire Clinic.

A CASE OF TYPHUS-LIKE FEVER FOLLOWING TICK BITE.*

By R. D. GLASSER, M. D., Norfolk, Va.

Mrs. S. P., age thirty-five, rather stout, above the average mentality and cleanliness, wife of a butcher in the city of Norfolk, Va., was bitten on the inner left thigh, the left buttocks and the lower right abdomen by a tick which came from a calf hide shipped from North Carolina or Virginia.

At each point of the tick bite, swelling, redness, and a small ulcer developed. She destroyed the tick. Similar ticks had often been noticed by the butcher and his family, and occasionally a tick had bitten one of them, but never before resulted in any illness.

On July 15, 1926, ten days after the bite, she had a chill, fever, severe headaches, muscular and joint pains all over the body. Two days later, her illness increased in severity when my first visit was made. At this time her temperature ranged from 100-103, pulse reaching 110 and respiration 28. Her skin was flushed and there was an erythematous eruption on both arms, chest and abdomen. There was localized swelling about the ulcers where the tick had bitten her. The heart and lungs were apparently normal and the abdomen was large and flabby, presenting a distinct movable mass in the lower right quadrant. This mass was not connected in any way with her present illness. The spleen was not palpable because of the excessive abdominal fat. The next morning the rash was still present, temperature reached 104, and prostration was more marked. That same evening the rash faded and reappeared later. The following morning she was admitted to St. Vincent Hospital with a temperature of 105 and extremely prostrated. The face was flushed, the conjunctivae congested and watery, the expression anxious and the mental condition dull. Questions were answered slowly, mental concentration being obviously difficult. The tongue was very dry and coated. There were no nits or evidences of lice in the head or clothing. Lice had been carefully looked for when first seen and upon admission to the hospital. There was no evidence of any rash at this time. The submaxillary glands were not enlarged but tender. The bitten areas appeared punched out and filled with necrotic plugs. There was no soreness or enlargement in the regional glands. Her condition continued febrile, temperature ranging 104-105.4, while prostration and delirium were quite marked.

July 25th, five days after admission to the hospital, the rash reappeared, becoming more definite and purplish and now covered all parts of the body except the face. There was a fine petechial rash appearing in discrete irregular macules over the chest, back and extremities, also including palms and soles. These would disappear upon pressure. But the majority were distinctly hemorrhagic in type and did not disappear upon pressure.

The inguinal glands on both sides were palpable and slightly tender. Small healing ulcers were still present on the lower right abdomen, left inner thigh and left buttock at the point of the tick bite.

Laboratory Findings:—Urine examinations of catheterized specimens, made on the 21st, 24th, and 26th of July, revealed some albumin, fine granular casts and a few pus cells.

The blood picture on July 20th showed white blood cells 5600, a normal differential count, and smears were negative for blood parasites.

On July 21st, the Widal was negative and a blood culture was likewise negative.

July 22nd, stool was negative for parasites.

July 24th, white blood cells 8800; small mononuclears 10 per cent; large mononuclears 10 per cent; polymorphonuclears 89 per cent.

Blood serum taken from the patient on July 25th, 28th and August 6th did not agglutinate B. proteus X_{19} or B. tularense. The specimen

*Read before the Norfolk County Medical Society, May 20, 1929.

taken on July 28th also gave negative agglutination for B. Eberthi and B. abortus.

On July 28th, 13th day of illness, Dr. R. R. Spencer, of the Hygienic Laboratory of Washington, was consulted. Six guinea pigs were injected intraperitoneally with whole citrated blood of the patient, each animal receiving 2 c.c. Only one of these guinea pigs developed fever which began on the 13th day after injection. Transfer of blood from this to other guinea pigs and to a monkey were made with entirely negative results.

The patient continued febrile for three weeks. There was no definite crisis, convalescence being very slow, and the patient was unable to help herself for nearly three months. There were no sequelae, although she did complain with occasional lumbar pains the rest of 1926 and during 1927; this was probably due to infected tonsils.

Discussion.—The clinical aspects of this case, in nearly every detail, suggested typhus fever, although it was not supported by the laboratory findings. Failure of the serum to agglutinate B. proteus X_{19} and the negative results of animal inoculation do not, however, exclude typhus fever.

Rocky Mountain spotted fever was considered, but the negative animal inoculations and the locality make such a diagnosis very doubtful.

Other ticks similar to the one that had bitten the patient were secured and proved to be *Amblyomma Americanum*. This tick is an occasional parasite of man but has never been implicated in the transmission of disease. The tick bites may have been coincidental but because the bites caused local sores and glandular enlargement preceding the onset of fever, one cannot ignore their possible significance.

The case is reported because of the association of the illness with tick bites, the consistently negative agglutination of B. proteus X_{19} and the failure to reproduce the disease in laboratory animals.

I am indebted to Dr. Spencer for his many valuable suggestions in assisting me to report this case in detail.

Medical Arts Building.

A man without mirth is like a wagon without springs, in which one is caused disagreeably to jolt by every pebble over which it runs.—*Henry Ward Beecher.*

TUBERCULOSIS OF THE ILEOCECAL VALVE—REPORT OF AN UNUSUAL CASE OF INTESTINAL OBSTRUCTION.*

By WALLACE M. YATER, M. D., Washington, D. C.
Full Time Clinical Professor of Medicine, Georgetown University, School of Medicine.

The following case of intestinal obstruction is unusual in two respects: 1, Because the ileocecal opening was almost completely stenosed by tuberculosis, which was apparently confined strictly to the so-called ileocecal valve; and, 2, Because a mass of feces, composed mainly of watermelon seed, was present in the terminal ileum, and probably acted as a ball-valve.

Case Report.

The patient, a colored man, aged 22 years, entered Georgetown University Hospital on March 15, 1929, complaining of generalized cramp-like abdominal pains. At the age of thirteen he had had typhoid fever, and he had suffered from rheumatic pains in the joints of his legs practically all of his life. For several years he had had vague abdominal distress with occasional paroxysms of crampy pain. Since December, 1928, he had suffered from a more or less constant aching sensation in the abdomen, with bouts of colicky pain which became very frequent and very severe two weeks before he was sent to the hospital. Toward the end of this period the pain recurred every few minutes and was worse at night. The pain was most severe in the right lower quadrant and umbilical region. With each attack of pain the patient had noticed a knot the size of a hen's egg moving about in the right lower quadrant of the abdomen. The pain was increased by exertion and was not influenced by eating. For three days before admission the desire to eat had been absent and the bowels had not moved. Physical examination revealed a somewhat emaciated and dehydrated young negro, apparently in great pain. The examination was essentially negative except for the abdomen. The latter was not distended but the muscles were very tense, and tenderness was complained of on palpation, especially in the right iliac region. Rectal digital examination revealed a doughy, tender mass in this region. The temperature was 98.6° F., and the pulse rate 96 beats per minute. The urinalysis was essentially normal. The leucocytes numbered 5,750 per cu. mm. of blood, of

*From the Georgetown University School of Medicine.

which 70 per cent were polymorphonuclear neutrophiles. The blood nonprotein nitrogen was 50 mg. per 100 c.c. of blood. Roentgenologic examination of the gastro-intestinal tract showed that several feet of the terminal ileum was markedly dilated, beyond which the barium failed to pass. A purgative enema was very effective and fluoroscopic study after a barium enema revealed a well-filled and apparently normal colon. The diagnosis made was intestinal obstruction near the ileocecal juncture, and after the administration of considerable fluid by mouth and a liter of ten per cent glucose solution in one per cent saline solution intravenously, the patient was sent to the operating room. Dr. George Tully Vaughan explored the abdomen through a lower right rectus incision. The terminal ileum was tremendously dilated and hypertrophied and filled with impacted fecal matter. The cecum and large intestine appeared normal, but the appendix was enlarged and subacutely inflamed. The ileocecal opening seemed to be very much contracted. There were numerous adhesions and some large lymph nodes about the cecum. The ileum was opened just proximal to the ileocecal juncture and was found to be filled with impacted fecal matter and a large number of black watermelon seed. An opening between the ileum and the cecum could not be found. The fecal matter was removed from the ileum and an anastomosis was made between the terminal ileum and the cecum. The appendix was removed. An ileostomy was done high up in the ileum and a large tube inserted. At the close of the operation the pulse was rapid and weak. After reaction from the anesthesia, the patient vomited. Fluid was administered by hypodermoclysis and by retention enema. During the night the patient became irrational and got out of bed. Early in the morning he died while attempting again to leave his bed.

Necropsy was of interest only as regards the abdomen. This was distended, the distention being due to ileus of the colon and dilatation of the lower five feet of the ileum. There was no gross evidence of peritonitis. The terminal five feet of the ileum was dark but not gangrenous and was fairly well demarcated from the rest of the small intestine. The affected portion of the ileum contained a large quantity of dark brownish, semi-solid fecal material. The muscularis was enormously thickened, the wall being approximately 3 mm. thick. This thickening involved the ileocecal opening, which hardly admitted the point of an ordinary hemostatic forceps. This small channel, however, was almost 2.0 cm. long. There was no evidence of ulceration or induration of the so-called ileocecal valve. The mucosa of the ileum showed only post-mortem discoloration. The colon appeared normal. The ileocecal anastomosis was intact and the stump of the appendix was well closed. Evidence of tuberculosis was not found in the entire body.

Microscopic sections were made of the wall of the stenosed ileocecal canal, of the cecum, and of the ileum at various levels proximal to the ileocecal juncture. The mucous membrane was intact in all portions of the bowel examined. Typical tuberculosis was found involving a greatly thickened submucosa of the tissues of the ileocecal canal, but evidence of such disease could not be found in any other part of the bowel examined. The ileum showed only the marked hypertrophy of the muscular layers. The cecum appeared normal in every respect. Unfortunately, the lymph nodes in the region of the cecum were not saved at necropsy.

Comment.

Reports of cases of hyperplastic tuberculosis of the ileocecal region are not rare. This region is the common site in the gastro-intestinal tract of hyperplastic tuberculosis, and obstructive rather than ulcerative or toxic phenomena dominate the picture. This type of intestinal tuberculosis was first described by Hartmann and Pilliet in 1899. Usually, however, the degree of stenosis of the ileocecal canal, such as existed in this patient, does not occur until a large mass of fibrous and tuberculous granulation tissue has formed. In this case there was no gross evidence of such a pathologic process, and at first it was thought that the condition was congenital atresia of the ileocecal valve. Although most observers consider this form of tuberculosis to be due to the human bacillus, and secondary to some focus elsewhere, often very slight, the absence of such a demonstrable focus in this instance raises the question as to the primary or secondary nature of the infection and the type of infecting bacillus.

The history indicates that the stenosis had existed for several years. The contents of the

ileum, ordinarily of fluid consistency, had trickled through the small ileocecal channel until the patient had partaken of a feast of watermelon seed, which acted as a nidus for the formation of a ball-valve fecal bolus. There seems to be a belief among negroes that watermelon seed are good medicine for colic, and probably this man consumed the seed in the hope of curing his long standing abdominal "misery."

Georgetown Hospital.

PEPTIC ULCER—THE CLINICAL PROBLEM IN THE LIGHT OF EXPERIMENTAL DATA.*

By CHARLES BRUCE MORTON, M. D., University, Va.
Assistant Professor of Surgery and Gynecology in the University of Virginia.

The etiology of peptic ulcer may be divided into two problems: first, what causes the initial, acute ulceration; and, second, what prevents the initial ulceration from healing and causes it to assume the characteristics of chronicity.

Regarding the first problem, it is easy to conceive of many causes for acute ulceration in almost any individual. Hot foods, irritants, abrasives, infectious organisms and many other agents may and probably do cause damage to the gastric or duodenal mucosa not infrequently. In the normal individual, however, the injury is rapidly repaired. All experimenters agree that any acute ulcer in the normal stomach or duodenum heals readily and rapidly.

The second problem, what accounts for the chronicity of peptic ulcer, presents many difficulties. Certain experimental data seem to suggest the importance of chemical and mechanical factors.

Experimenters were seldom able to reproduce in animals the chronic, indurated peptic ulcer found in the stomach and duodenum of man until Mann and Williamson, in 1918, reported an investigation in which they induced the formation of typical chronic ulcers in the duodenum and jejunum of dogs in more than 90 per cent of experiments. In 1927, I repeated their procedure, and in twenty consecutive experiments found subacute and chronic ulcers in 100 per cent of experiments. By a modified method I induced the additional formation of typical subacute and chronic peptic ulcers in the stomach in 62.5 per cent of prolonged experiments.

In the original experiments of Mann and Williamson the ulceration followed transplantation of the bile and pancreatic ducts from their normal position in the duodenum to a point lower down in the intestinal tract. Subsequent experimentation showed that the same result could be accomplished by transplantation of the duodenum with the ducts intact. The technic of this operation, which I shall refer to as "surgical duodenal drainage," is as follows: The pylorus and duodenojejunal junction are severed and both of the cut ends of the duodenum closed by suture. The pyloric end of the stomach and the open end of the jejunum are next joined by end-to-end anastomosis, thereby re-establishing the continuity of the gastro-intestonal tract. The loop of the duodenum, containing the common bile duct and the pancreatic ducts, is then drained into the ileum by side-to-side anastomosis (Fig. 1.)

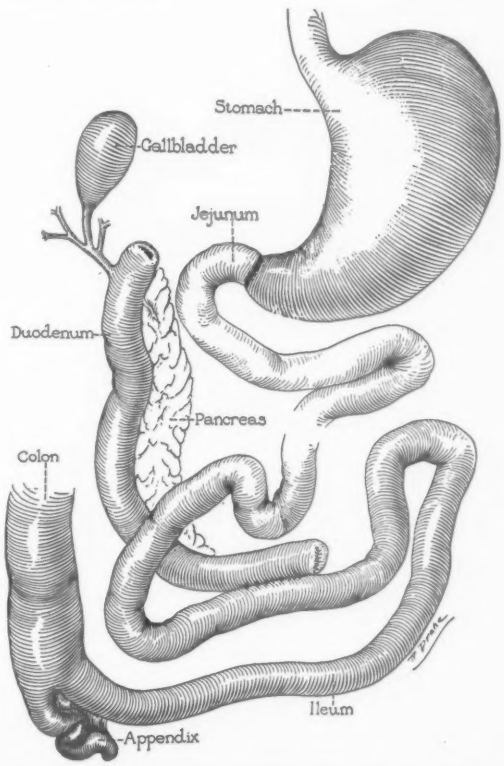

Fig. 1.—Diagram of the operative procedure of surgical duodenal drainage.

*Read before the Campbell County Medical Society, Lynchburg, Va., June 5, 1929.

This procedure has certain obvious results. The alkaline pancreatic juice, bile and duodenal secretions are thereby drained to the lower intestine so that the normal regurgitation of alkaline juices into the stomach is precluded. Furthermore, the strongly acid gastric chyme empties into a portion of intestine which is incapable of neutralizing it with any degree of rapidity or effectiveness.

Almost invariably in such experiments a chronic peptic ulcer forms just distal to the pylorus at the point where the ejections of acid chyme expelled through the nozzle-like pylorus impinge against the wall of the intestine. It seems significant that the site of the ulceration is exactly the same as that in which ulcer of the duodenum occurs in man.

If in addition to the operation for surgical duodenal drainage several areas of gastric mucosa are excised, I found that the denuded areas on the lesser curvature of the stomach failed to heal and formed typical subacute and chronic gastric ulcers in 62.5 per cent of experiments. Denuded areas in other parts of the same stomach healed readily. It seems significant that chronic ulcers in the experiments developed on the lesser curvature which is the usual site of ulceration in the stomach of man. The lesser curvature is the so-called "magenstrasse," or gastric street. It is at this area that the forces of gastric contractions converge and along which the gastric chyme is propelled in leaving the stomach.

Several other types of experiments were performed, and it was found that whenever the alkaline juices normally present in the duodenum were diverted from the region of the pylorus, ulceration usually occurred.

In order to determine what would occur if the alkaline juices were re-introduced to the area of ulceration, several additional groups of experiments were performed. In these, use was made of gastro-enterostomy, gastro-duodenostomy, duodeno-jejunostomy and other similar procedures. Each of these operations gave some degree of mechanical protection to the ulcer and, by the re-introduction of the alkaline juices to the region, decreased the acidity of the gastric chyme. In all such experiments healing of the ulcers ensued.

Analysis of the data of these experiments suggested that in each case the withdrawal of the alkaline juices from the stomach and intestine into which it emptied induced the formation of peptic ulcer and the site of the ulceration in each case was determined by the point at which the forces of acid ejections converged. Healing ensued when the alkaline juices were re-introduced to the region of the ulcer and when the forces of the acid ejections of the gastric chyme were diffused or counteracted.

In the experiments on animals the chemical and mechanical factors mentioned above seemed to explain the formation of typical subacute and chronic peptic ulcers. Both grossly and microscopically, these ulcers were almost indistinguishable from the peptic ulcers found in man. However, because of the difficulty of applying accurately the data of experiments on animals to clinical problems, an attempt was made to determine if patients with peptic ulcer might show any unusual relationship between the acid gastric chyme and the alkaline juices in the duodenum not found in normal individuals.

Recently I made a preliminary report of a small group of experiments on patients with peptic ulcer controlled by a similar group of patients who had no evidence of peptic ulcer. The groups are not large enough for the findings to be conclusive, but they were interesting in that they seemed to substantiate the data of the experiments on animals.

Briefly, the experiments consisted in the simultaneous withdrawal of samples of gastric and duodenal chyme following the ingestion of a test meal. In persons without peptic ulcer no free hydrochloric acid was recovered in samples of the contents of the duodenum and the total acidity of the material was low and relatively constant in spite of the usual wide variations in the acidity of the gastric contents. In persons with peptic ulcer free hydrochloric acid was found in the samples from the duodenum, and the total acidity of the material was more variable and much higher than that in persons without peptic ulcer. Certain other findings suggested that dysfunction of the pylorus might be at least partially responsible for the findings in cases with peptic ulcer.

Besides these purely experimental data, certain facts about peptic ulcer have been learned through clinical experience. One of the most characteristic features of peptic ulcer, particularly ulcer of the duodenum, is the period-

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icity of its symptoms. Periods of pain alternate with periods of freedom from any trouble. Studies by Caylor suggest that during the periods of freedom from symptoms the normal healing power of the gastro-intestinal tract predominates over the destructive processes. When the destructive forces gain the ascendency over the repair processes, symptoms reappear. Rapid destruction of healing granulations may lead to the hemorrhages which are so common in patients with peptic ulcer.

It is generally recognized that the highly-strung, easily-excited and hyperesthetic type of individual is more apt to have peptic ulcer than other types. Symptoms from the ulcer are frequently exaggerated during periods of excessive nervous tension, activity or strain, and not infrequently disappear when the patient is put at rest.

The acidity of the gastric chyme was one of the first facts seized upon as bearing a causative relationship to peptic ulcer. Gastric analysis was devised as a diagnostic measure to determine the degree of gastric acidity. The administration of alkalies offered an apparently rational method of controlling the acidity and was adopted as a routine therapeutic measure. Experience has shown, however, that gastric analysis, in so far as the determination of the gross acidity of the gastric chyme is concerned, is of no diagnostic value in cases suspected of peptic ulcer. The administration of alkalies does relieve the symptoms and lower the acidity of the gastric chyme temporarily, but is followed by a rise in the acidity to a higher level than that before the administration of an alkali. Apparently the most satisfactory non-operative method of controlling gastric acidity is the frequent ingestion of small meals composed of foods that do not stimulate excessive secretion of acid by the gastric mucosa. Of these foods, milk, cream and egg mixtures are the most satisfactory. Incidentally, Boyden has shown experimentally that an egg yolk and cream mixture stimulates the discharge of bile into the duodenum. The significance of this finding is apparent.

Experience has shown that certain operations, both direct and indirect, are useful in treating cases of peptic ulcer. Gastro-enterostomy, an indirect type of operation, is one of the simplest and most useful of the surgical measures. Direct operations, combining resection of the ulcer with plastic procedures on the pylorus or stomach are useful in certain cases.

One very important feature of peptic ulcer is the distinct clinical difference between ulcers of the stomach and ulcers of the duodenum, particularly in regard to the treatment and the prognosis. The medical treatment of ulcers of the stomach is much less satisfactory and effective than of ulcers of the duodenum. An ever-present danger in cases of gastric ulcer is the possibility of malignant change. Recently, MacCarty and Alvarez and MacCarty have reported studies on the relationship of the size of gastric ulcers to the occurrence of carcinomatous changes. They state that any ulceration of the stomach which has attained a diameter of 2.5 cm., approximately the size of a quarter, is almost certainly malignant. Their smallest cancerous ulcer with lymph-nodal involvement was only 1.2 cm., in diameter.

With this short summary of some of the experimental and clinical data on peptic ulcer, I shall briefly outline some of the more generally accepted principles of the management of peptic ulcer. There is considerable controversy over the medical *versus* the surgical treatment. In clinics where all cases of peptic ulcer are seen by both medical and surgical consultants, however, certain general principles of management are followed. Of especial importance, ulcers of the duodenum are managed differently than ulcers of the stomach.

Duodenal Ulcer. The patient with a simple, uncomplicated duodenal ulcer is usually given the so-called medical treatment. Rest in bed at first may or may not be prescribed. A fairly rigid and standardized diet of the type described by Sippy is given for a time, usually with the addition of alkaline powders. The diet is then gradually increased in amount until the caloric requirements of the individual are satisfied. Either frequent small meals or a "milk-and-cream" mixture between meals is prescribed for a period of several months. In prescribing medical treatment the economic status of the individual is an important consideration. If the patient is unable to follow this regimen because of financial or occupational reasons, it is an obvious waste of time

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to prescribe it. Some other form of treatment must be advised.

Surgical treatment is indicated in certain cases: first, those who elect it because of unwillingness to adhere to a dietary regimen or because their economic status precludes their adherence to it. In the next group are those cases in which medical management has failed. What constitutes a failure is debatable, but certainly the continuation or recurrence of symptoms after several weeks or months of treatment suggests failure. The next group of patients probably deserves surgical treatment immediately. I speak of those in which there is hemorrhage or obstruction. Hemorrhages are apt to recur unless the ulcer is excised. Obstruction with gastric retention will yield only rarely to any treatment other than surgical. Perforation, of course, necessitates immediate operation.

Gastric Ulcer. Fortunately ulcers of the stomach are much less common than ulcers of the duodenum. An ulcer of the stomach does not respond to medical treatment as readily as a duodenal ulcer. Several additional factors should be carefully weighed before deciding upon the treatment. Of these, the age of the patient, the duration of the disease and the size and character of the ulcer roentgenologically are important. In a young individual with a small ulcer of recent origin medical management should be given a trial if possible. In older persons, in cases where the ulcer has been present for a long time and in cases where the ulcer is large or presents a ragged appearance roentgenologically, surgical treatment is definitely indicated. Only by prompt exploration will the case of early cancer of the stomach be differentiated from the benign ulcer and given the chance offered by early resection of the growth. Temporization with cases of gastric ulcer until the diagnosis of gastric carcinoma is certain deprives the patient of practically his only chance for a cure.

It is impossible at this time to discuss the details of either the medical or surgical management of peptic ulcer. The Sippy management and its modifications are familiar to every one. The surgical measures employed are numerous. The gastro-enterostomy is probably the most common. For duodenal ulcer, excision of the ulcer together with the anterior two-thirds of the pyloric muscle removes the ulcer cleanly. The resulting opening is closed by a suture line transverse to the axis of the intestine after the method of Judd or Horsley. Such a gastro-duodenostomy destroys the nozzle-like action of the pylorus, removes the diseased tissue, is accompanied by very little risk and is eminently satisfactory. For gastric ulcer, removal of the ulcer by local excision or by resection of the stomach is urgently indicated in order to minimize the danger from cancerous change. If inflammatory reaction or obstruction makes the operation hazardous or difficult, the resection may be accomplished in two stages.

Summary

A brief resumé has been made of some of the author's previously reported experiments on the etiology of peptic ulcer. Analysis of the data suggests that in each case the withdrawal of alkaline juices from the region of the pylorus by surgical duodenal drainage induced the formation of peptic ulcer and accounted for its chronicity. The site of the ulceration in each case was determined by the point at which the forces of acid ejections from the stomach converged. Healing ensued when the alkaline juices were re-introduced to the region of the ulcer and when the forces of the acid ejections were diffused or counteracted.

Attention was called to the distinct clinical differences between gastric and duodenal ulcers. The general principles of the management of both types of peptic ulcer were briefly alluded to and the importance of both medical and surgical consultation in every case of peptic ulcer was emphasized.

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THE ACUTE ABDOMEN.*

By HARRY M. HAYTER, M. D., Abingdon, Va.

Abdominal pain is the constant and outstanding feature in all cases presenting the picture of "The Acute Abdomen." Nausea, with or without vomiting, is another fairly constant symptom. Tenderness and muscular rigidity may or may not be present, depending upon the actual site of the pathological process which is producing symptoms referable to the abdomen. If abodminal pain always signified intra-abdominal pathology which was amenable to surgical treatment, the problems of the physician would be greatly simplified. The fact that many non-surgical conditions announce their presence by abdominal pain emphasizes the necessity of close cooperation between the surgeon and the internist.

When one sees a case of this type, the first question is—is this case one for surgical or medical treatment? In answering this question an accurate history and thorough physical examination are essential. Snap-shot diagnoses on the part of the experienced physician are often correct, yet the reverse is equally true, and the individual who practices his art in this manner will sooner or later have just causes for regret. Laboratory findings are a great asset in arriving at a diagnosis; however, the clinical picture is the factor of primary importance, and rarely is one justified in disregarding this in favor of laboratory findings. X-ray examination is a valuable factor in differentiating between disease of the chest, genito-urinary tract, and acute surgical conditions of the abdomen.

I shall not attempt to discuss, yet will mention briefly a few non-surgical conditions which may at times simulate acute surgical conditions of the abdomen.

Disease within the chest may produce abdominal pain, especially if there is irritation of the parietal pleura. This is notably true in children. In such cases the tenderness is more superficial and deep pressure does not increase the pain as it does in peritoneal irritation. The patient's temperature is higher. The white blood cell count is higher. The character of the respiration will often point to disease of the lungs.

Pericarditis, angina, and coronary thrombosis often cause severe epigastric pain. The patient with cardiac disease is usually found sitting up, while those with peritoneal irritation are more comfortable lying down. The character of the arterial walls and the blood pressure are factors of importance. Chronic passive congestion of the liver due to sudden decompensation of the heart often resembles gall-bladder and appendiceal inflammation.

Considering the above group of disorders, the necessity of a careful examination of the chest is apparent to every physician.

The gastric crises of tabes dorsalis may simulate acute intra-abdominal pathology. A past history of venereal disease, the reactions of the pupils, and a test of the deep reflexes of the lower extremities, together with the blood picture, will help in differentiating between the two conditions.

Because of its ability to imitate numerous disorders, uraemia has very aptly been referred to as "the proteus of diseases." A careful urinalysis and blood chemistry in questionable cases will solve this problem of diagnosis.

The occupation of a patient is always to be considered, as the abdominal symptoms of lead poisoning are well known. The characteristic change in the blood cells and the presence of the lead line on the gums would be suggestive of this possibility.

Prostatitis and especially acute seminal vesiculitis may cause severe referred pain in the abdomen. The importance of rectal examinations cannot be emphasized too greatly. I once heard one of my professors remark that the difference between an ordinary physician and a diagnostician was that the diagnostician always did a rectal examination.

Injury to the spine or ribs which involves the spinal nerves may give rise to acute abdominal pain and tympany. The pain of an early herpes zoster, before the appearance of the skin lesions with their characteristic distribution, also offers its problem of diagnosis.

Abdominal pain, nausea, and vomiting occur frequently in cases of diabetic acidosis. Careful histories and urinalysis are essential in order that many of these cases may be saved from some operative procedure.

*Read at the meeting of the Southwestern Virginia Medical Society, in Galax, Va., September 16-17, 1929.

It is easy to enumerate diseases which often simulate acute surgical conditions of the abdomen, yet my personal experience has been that often when confronted with such a case the diagnosis is an entirely different and more difficult problem.

Acute infections of the kidneys, renal and ureteral calculi, offer themselves for differential diagnosis from acute surgical conditions of the other abdominal viscera. The character and radiation of the pain, tenderness in the flank and lumbo-costal angle, the presence of albumen, blood and pus, in the urine, and positive X-ray findings serve to incriminate the kidneys. Chills occur more frequently, the temperature is usually higher, and the white blood cell count is usually higher in kidney infections than in early acute infections of the appendix and gall-bladder. Nausea is a less constant symptom in kidney infections than it is in cases with peritoneal irritation. In spite of these diagnostic principles, many of us must plead guilty to removing innocent appendices and later learn that an obstructive pyelitis has broken loose and then see the urine loaded with pus and albumin. The patient with a ureteral or kidney colic is usually restless and moving about, while the patient with peritoneal irritation is quiet, because motion increases his pain. Intermittent hydronephrosis causes severe abdominal pain. Urinalysis may reveal nothing abnormal. The temperature and blood picture are not suggestive of an infectious process. Often there is a palpable mass in the kidney region. Cystoscopic examination establishes the diagnosis.

Acute gastro-intestinal disturbances of dietary origin must be kept in mind. Nausea, vomiting, and diarrhoea are outstanding symptoms. The abdominal pain and tenderness remain generalized in contrast to the localization seen with an inflammatory process of a limited area.

The acute surgical abdomen presents many difficult problems. When occurring during infancy and childhood, they are extremely important because of the high mortality rate in cases in which the true nature of the disturbance is not recognized. The child is much less resistant to a peritonitis than is the average adult.

The most common intra-abdominal lesion met with in the first decade of life is acute appendicitis. One very characteristic feature of appendicitis in children is the early appearance of nausea. This is often absent in adults. The uncertainty of the diagnosis in children may at times be due to the anatomical position in which the appendix may be found, for often it occupies a position high beneath the liver when the descent of the caecum has been delayed. Again, as is frequently true in adults, it may occupy a position low in the pelvis.

One of the most serious emergencies occurring during childhood is pneumococcal peritonitis. Clinically, the disease may be divided into two types, an acute and chronic, or localized variety, the former being the more usual and fatal form of infection. This disease is most frequently encountered in young girls of the poorer classes and seems to be essentially associated with dirt and neglect. Intussusception is another very common cause of abdominal crises met with in early childhood. The characteristic findings are the presence of a palpable mass, the passage of blood and mucus without fecal matter, and the symptoms of an intestinal obstruction.

Congenital pyloric stenosis, while not so urgent a condition, still, in view of the failure of medical treatment to relieve this condition, must be included in the list of surgical emergencies of childhood. In this same group must be considered obstructions of the duodenum due to congenital abnormalities or to obstructing bands of adhesions.

Abdominal tuberculosis is rarely surgical, yet it may give rise to an obstruction which requires surgical treatment. Abdominal injuries, the presence of foreign bodies which perforate or lodge in the intestinal tract, may produce acute surgical conditions of the abdomen. Intestinal obstruction due to masses of intestinal parasites is occasionally encountered. Other conditions, such as diverticulitis, gastric haemorrhage, gastric ulcer, abscess of the liver and spleen and perforation of typhoid ulcers are possibilities, yet are rarely encountered.

A much greater variety of acute surgical conditions of the abdomen are encountered in adult life. An accurate differential diagnosis is very gratifying, yet of far more importance is the recognition of the fact that an acute surgical condition exists and that delay in treatment only spells disaster. Having eliminated the non-surgical disorders, it is much better to explore the abdomen than to wait for

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later symptoms, which may make possible a diagnosis of the particular part involved, for too often the patient is then in collapse and surgical treatment of little avail.

In the acute surgical abdomen acute appendicitis is always to be considered. The typical case is familiar, yet the atypical case demands the same surgical treatment and will not tolerate delay.

Acute infections of the gall-bladder and bile ducts in the majority of cases, will to a certain extent, become quiescent and thus permit operation at a more favorable time. However, there does occur the occasional fulminating infection which goes on to perforation and peritonitis or to local abscess formation if not operated upon immediately. A few points of interest in the diagnosis of gall-bladder disease are the relative infrequency of this disorder in young adults, the history of digestive disorders and often of previous similar attacks, and the apparent relationship of multiple pregnancies and infections of the gall-bladder. In recent years the development of X-ray studies of the gall-bladder has done much to facilitate the diagnosis of cholecystitis and cholelithiasis.

Sudden acute pain in the epigastrium, a past history of indigestion, and a very rigid board-like abdomen, suggest an acute perforated gastric or duodenal ulcer. If seen early, there may not be an elevation of the temperature or white blood count. If the patient is in shock, the temperature may be below normal. The peritonitis is at first chemical in nature, yet, as ileus develops, becomes bacterial. Immediate surgical treatment is imperative. Each hour that passes decreases the patient's chance for recovery. If the perforation is so located that the repair is likely to result in obstruction of the duodenum or pylorus, a gastro-enterostomy is indicated if the patient's condition will permit this additional operative procedure.

Acute pancreatitis or mesenteric thrombosis may produce a similar picture, yet these conditions are rarely diagnosed until an exploratory incision is made.

Abdominal pain and distension, nausea, vomiting, persistent constipation and a varying degree of toxemia and shock, depending upon the location and duration of the disorder, are classical symptoms of intestinal obstruction. Fecal vomiting should be regarded as a sign of impending death rather than a symptom of intestinal obstruction.

Ruptured tubal pregnancies, tubal abortions, strangulated ovarian tumors and cysts and strangulated pedunculated tumors of the uterus form a group of surgical emergencies encountered in the adult female. In this same group one must also consider rupture of a pregnant uterus, a bleeding placenta praevia and premature separation of the placenta where there is an undilated rigid cervix, and other conditions which make delivery through the normal passage impossible.

Acute salpingitis is not a surgical emergency. If operated upon during the acute stage, the mortality rate is higher and there is greater danger of adhesions which may produce acute obstruction. Many of these cases will recover completely if given time.

One frequently encounters acute surgical abdomens, due to abdominal injury with rupture of a hollow viscus, the liver, spleen, or kidney. Septic emboli may produce abscesses of the liver, spleen, and kidneys. Again, abscesses of unknown origin are occasionally encountered within the abdominal cavity.

In strangulated hernia the diagnosis is apparent. In these cases it is important to avoid vigorous efforts to reduce the hernia. Operation is much less serious than a ruptured intestine or severe haemorrhage from a lacerated omentum. Intra-abdominal hernias are rarely diagnosed before an exploratory incision is made.

In any doubtful case, I would like to emphasize the importance of avoiding any purgative and of avoiding barium meals for an X-ray study of the intestinal tract. One authority has advised "when in doubt, operate." Dr. C. H. Mayo states that he has never seen a patient die as the result of an exploratory incision, while he has seen many die because one was not made.

CESAREAN SECTION.*

By ROBERT P. KELLY, M. D., F. A. C. S., Lynchburg, Va.

Some years ago it was my privilege to read before this society a paper on "Cesarean Sections, its Indications and Limitations[1]". Since that time there have been many advances in obstetrics and Cesarean section has not been neglected.

In deciding whether or not to do this operation, the indications and contraindications of

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1. Virginia Medical Monthly, July, 1922, page 215.

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an earlier day no longer obtain. Formerly it was only a question of the classical operation, which some obstetricians have now almost entirely abandoned. It remained for DeLee, to whom we owe many other advances in obstetrics, to develop the present improvement in Cesarean section, viz., the operation known as laparotrachelotomy, or the cervical Cesarean section.

For the entire technique of this operation, I refer you to the *Journal A. M. A.*, March 14, 1925; or the 1925 Year Book on Obstetrics and Gynecology.

Indications for Cesarean section are usually classed as *absolute* and *relative*. The operation has been done for every complication imaginable and often has been done for no good reason whatever, except as the easiest way out of a difficulty. The indication is absolute when the C. V. diameter is 6½ cm. or less. With our present improved technique, this diameter might be extended to 7½ cm. An oversized baby in a normal pelvis also furnishes an absolute indication. Even a dead baby would not affect the decision in the absolute class, but, of course, otherwise does so.

The relative indication includes all cases with a C. V. diameter of 6½, or 7½, to 9 cm., and it is these cases that require the most careful consideration. About 80 *per centum*, if given a chance, will deliver spontaneously. In this class are included all cases in which Cesarean section is the safest method of delivery for both mother and baby. In cases where the C. V. diameter is 9 to 10 cm., normal labor is the rule.

The present indications and contraindications for Cesarean section are governed, to a large extent, by the *kind* of operation contemplated. In certain cases a classic operation might be very dangerous or even fatal to the patient, while a low cervical could be performed with reasonable safety.

The chief objections to the classic operation are its limitation to use in clean cases only, the complications (general peritonitis, dilatation of stomach, ileus, etc.), the danger of rupture of the uterus in possible future labors, and the large maternal morbidity and mortality.

Cesarean section is to be considered in the following cases:

1. Contracted or deformed pelvis;
2. Disproportion in a pelvis of any size;
3. Organic diseases (heart, lungs, etc.);
4. Abruptio placentae;
5. Malpositions;
6. Obstruction in birth canal by tumors:
7. Eclampsia;
8. Placenta previa.

Two of these conditions, eclampsia and placenta previa, deserve further attention. Eclampsia, *per se*, is not an indication for Cesarean section. These are poor operative risks. In cases of a primiparae with long tight cervices, it is occasionally indicated, especially if there is any disproportion. The conservative treatment, as a rule, gives better results. The low cervical under local anaesthesia would be the ideal method of treatment in many such cases, especially the pre-eclamptic ones.

Like eclampsia, placenta previa is too often treated by Cesarean section. Some cases, to be sure, are better treated by this method; viz., primiparae with tight cervices or primiparae or multiparae with complete or central placenta previa.

Since last October, the writer has delivered four cases in multiparae of complete placenta previa by perforating the placenta and putting in a 11 cm. Voorhees bag with two pounds of weight applied. The bleeding was well controlled in each case. All four mothers survived the delivery, one having been saved only with the greatest difficulty; three of the babies were born alive and one of the babies was stillborn, dying a few minutes before delivery was started; one full term, living two days; another full term, left the hospital in good condition; and the fourth baby was born prematurely (seven months), living four hours. The mother in this case came in with a temperature of 102, and blood culture showed a streptococcic infection. This patient died very suddenly two weeks after delivery, not as a result of placenta previa but from the infection she had when admitted to the hospital.

These cases might have been better treated by Cesarean section, had not the possibility, or probability, of infection been too great. They had been examined at their homes in the country before coming to the hospital, and I was afraid to attempt Cesarean section. In case of the latter, I feel that a Porro would have been necessary, in which case the classic operation might have been preferable.

In organic heart or lung disease, Cesarean section is frequently the method to be chosen.

Local anaesthesia is especially desirable in these cases, but one should have very able assistants before attempting it.

In cases with excessive scar tissue in the cervix and vagina and with a history of loss of the first baby, a Cesarean section would offer the best hope of a good result. Also, in cases of habitual fetal death, it would sometimes be indicated a week or so prior to term. In the majority of cases of old primiparae, especially in malposition cases, this operation would be indicated. In questionable cases a test of labor will decide the matter.

There are many other conditions in which this operation is considered, but time prevents further detailed discussion. To sum up the consideration of indications, they are practically the same for the low cervical as for the classic operation, but with the low cervical there is an *extension* of the field of application, with a greatly reduced infant and maternal morbidity and mortality.

As for the contraindications of the low cervical, compared with the classic operation, it may be said that there are practically no cases in which a Cesarean section would ordinarily be the method of delivery most suitable where the low cervical operation cannot be done.

Let us make further comparison of the two operations. First, there is no obstetric operation which results in such large maternal mortality as does the classic Cesarean. This cannot be said of the low cervical operation, notwithstanding its wider application. Out of 330 consecutive laparotrachelotomies done at the Chicago Lying-in by DeLee and his staff, there were two maternal deaths. One was a patient in labor four days, weight 270, blood pressure 208. The other was a case of ether pneumonia. There were 328 babies born alive, two being dead before operation. Over the same period of time covering the 330 laparotrachelotomies, there were 136 classic Cesareans by the same operators, with seven deaths, over 5 per cent. Two died from peritonitis, three from toxemia of pregnancy, one from heart disease, and one from abruptio placentae. These were presumably clean cases.

In the classic operation, the mortality in favorable cases is given by different authorities as from 2 to 8 per cent as a minimum. Others put it much higher, even to 27 per cent. Williams puts it at from 2 to 8 per cent in clean cases, depending on how long the patient has been in labor, and other considerations.

The low cervical section has the following advantages over the classic operation:

1. A real test of labor may be given.
2. The operation may be done after other means of delivery have been attempted, and thereby would make craniotomies on living babies unnecessary.
3. The danger to mother and child is much less.
4. The patients have more the feeling of non-operative cases; they have very little vomiting, nausea or gas.
5. The intestines, omentum and peritoneum are not handled, consequently there is less shock.
6. Hemorrhage is less frequent and more easily controlled.
7. Formation of adhesions is reduced to a minimum.
8. The danger of ruptured uterus in future deliveries is slight.

I should like to add that I have delivered, by this method, three patients who formerly had the classic operation and each one has told me that, from the patient's point of view, there was no comparison, in favor of the low cervical operation.

Results of this operation in my own cases have been most satisfactory. In eighteen deliveries (by this method) in the past five years, I am able to report eighteen living mothers and babies. In addition to these, I have operated on two cases brought in by other physicians, in which the *only* hope was to save the baby. These were cases of eclampsia, one of fourteen hours and the other of twenty-four hours duration, both in extremis, both primiparae one with a definite disproportion and tight cervix, the other with a badly deformed pelvis. Both babies survived.

The indications in my eighteen cases were as follows: Four cases had a former classic Cesarean, two cases were primiparae with extreme toxemia and rigid, undilated cervices. The others were primiparae, two over forty years of age, one a breech. All of these cases, except one fifteen days past maturity, were given a test of labor varying from eight to twenty-four or more hours. None of my cases have had any complications, all having left the hospital on the thirteenth or fourteenth day, with two exceptions. One of these patients

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had phlebitis and was in the hospital four weeks. She came in with pyelitis. The other was my last case. She was a patient who had infantile paralysis at eighteen months of age and had not walked since. She could have gone home earlier but for this condition. She, too, had pyelitis on admission, was in labor and had a blood pressure of 200, albumen 4 plus and many granular and hyaline casts. The deformity of her pelvis prevented delivery from below; accordingly, although she weighed over 200 pounds, a low cervical was performed.

The points I desire to emphasize especially are:

(1) The opportunity in the low cervical operation of giving our doubtful cases a real test of labor. If we do this we will perform fewer such operations.

(2) The possibility of doing a low operation with reasonable safety on cases which are probably infected.

(3) The patient may subsequently be permitted to bear children without Cesarean section.

(4) The mortality is less than the average maternal mortality for all cases in Virginia.

Since the above was written, the writer has performed three low cervical Cesarean operations under spinal anesthesia and wishes to commend this form of anesthesia for your consideration in cases in which any form of inhalation anesthesia might be hazardous, especially in heart and lung diseases.

1112 *Church Street.*

INFECTIOUS MONONUCLEOSIS—WITH A CASE REPORT.

By HAROLD W. POTTER, M. D., Newport News, Va.

Infectious mononucleosis, a condition in which the haemopoetic centers are involved, is still sufficiently uncommon to be of more than passing interest. The case reported here, which was not correctly diagnosed until after the patient's recovery, baffled some of the best internists in Paris. The similarity of the blood picture to that of acute lymphoid leukemia is very striking and in some cases only the spontaneous recovery of the patient differentiates it from the practically always fatal leukemia. While many of the patients with infectious mononucleosis have an angina involving the mouth and throat and all of them show a tremendous increase in lymphoid elements in the blood picture, the gradual increase in the total white count differentiates it from agranulocytic angina.

Case Report

The patient, Mr. —, a Jewish American, age 47, was seen by me in the outpatient department of the American Hospital of Paris in August, 1927. He had been traveling in the Italian Alps and while there developed a sore throat and a painful mouth.

He suffered so much that he came to Paris for examination and treatment.

Family History: Revealed nothing of importance.

Past History: The patient had been in excellent health and had had no serious illnesses and no operations.

Present Illness: Patient had been traveling in Europe for about two months previous to this illness. While in the Italian Alps, he began to have severe headaches, and concurrently with these headaches he developed a sore throat. Swallowing became difficult because of the pain, and his gums began to bleed when he attempted to take food.

He became alarmed and hastened to Paris to the American Hospital for examination.

Physical Examination: The patient examined by me in the outpatient department was a white male, well developed, with no apparent abnormalities of gait or posture. His weight was 148 lbs.—usual weight 150 lbs.

Head and Neck: Distribution of hair normal. No pathology of the skin or bones of the head noted. Ocular movements were normal. Eyes reacted to light and accommodation normally. Examination of the throat revealed a red and angry mucous membrane. The mucous membrane of the mouth was infected and a slight amount of blood was oozing from the gums and the upper and lower incisors and canines. The spleen was slightly enlarged. No other masses could be made out. The extremities and genitalia were normal.

The temperature was 101° F. The patient was admitted to the hospital following this examination.

Laboratory Reports:

Urinalysis: On admission: Color—amber; specific gravity—1,025; albumen—trace; sugar—none. No red blood cells or casts.

Subsequent urinalysis revealed no change in these findings.

Blood Examination: On admission: Red blood—4,500,000; white blood cells—12,500; haemoglobin—80 per cent; Bordet Wassermann—negative; polys—60 per cent; large lymphocytes—25 per cent; small lymphocytes—15 per cent.

On day following admission: White cells—15,000; polys—50 per cent; large lymphocytes—35 per cent; small lymphocytes—15 per cent.

On third day: White cells—25,000; polys—20 per cent; large lymphocytes—50 per cent; small lymphocytes—30 per cent.

On fourth day: White cells—56,000; polys—5 per cent; large lymphocytes—70 per cent; small lymphocytes—25 per cent.

On fifth day: White cells—60,000; polys—5 per cent; large lymphocytes—71 per cent; small lymphocytes—24 per cent.

Progress of Case: Upon admission to the hospital the patient's temperature was 101° F., and ranged between this point and 104° F. during his stay in the institute.

The headaches became more severe, the bleeding from the gums became more marked, and the sore throat more painful. Supportive and symptomatic treatment was instituted by Dr. L. S. Fuller, the consulting internist on the case. A diagnosis of acute lymphoid leukemia was made and substantiated by a prominent haemotologist of Paris. The patient's family was given a prognosis of death in a week or two at the best.

The patient's wife decided to move him by ambulance to Switzerland and have his case studied by a prominent Swiss haemotologist. This was done and by letter he confirmed the diagnosis of acute lymphoid leukemia and also gave a fatal prognosis.

We heard no more concerning the patient until the spring of 1928 when he walked into the hospital and informed us that about five weeks after his arrival in Switzerland he began to improve, his blood picture returned to normal and he gradually convalesced to good health.

A blood count taken at the American Hospital at this time was normal both in regard to the absolute and relative relationships of his white cells. His spleen and liver were not tender and were normal in size. His throat and mouth were normal.

This case was undoubtedly one of infectious mononucleosis and resulted in the usual recovery.

This case is interesting because of the diagnostic problem it offered, its sudden onset, and the blood picture and physical findings suggesting an acute lymphoid leukemia. The treatment both in Paris and Switzerland was supportive and symptomatic. The patient went on to a spontaneous recovery with no special treatment.

If the literature published on Infectious Mononucleosis in 1927-'28 had been available at the time this case was seen, a more accurate diagnosis might have been made.

70 *Thirty-Third Street.*

STERILIZATION BY VASECTOMY UNDER STATE LAW.

By H. COLLES GRANT, M. D., Staunton, Va.*

Sterilization of the insane or feebleminded must necessarily be done with as little fright and inconvenience to the patient as possible, lest the patients to follow stampede and refuse to be operated.

The method adopted by Dr. De Jarnette, Superintendent of the Western State Hospital, is the scrotal route in preference to the external ring route, as advocated by some surgeons.

A modification of the method employed by Dr. R. L. Dickson, of New York, is followed: The penis is strapped to the abdomen, and the scrotum and surrounding skin are painted with iodine. The burning of the iodine is usually the only pain complained of by the patient during the operation. The vas is next located, and is found lying under the cord which contains the veins, etc. It is drawn to the top by the finger and then grasped with a small Allis forceps, novocain having previosuly been injected into the points where the forceps grasp. The vas can be recognized by its hard, stringy feel and occasionally can be seen shining through the skin of the scrotum. More novocain is now injected over the line of incision and the vas exposed. The incision need not be over an inch long. Blunt dissection is then used to expose the vas, thus avoiding unnecessary bleeding. The vas is then grasped in a pair of forceps and ligated in two places with No. 8 braided silk, and a section removed. Hesitate long enough to be sure that there are no leaking blood vessels, for this will save a lot of unnecessary worry later.

The wound is then closed and dressed, and

*Dr. Grant was at the Western State Hospital at the time of submitting this paper but is now with the United Fruit Company, New York.

by the next morning the patient is able to be up, wearing a suspensory for support.

There is no mutilation to this procedure, two stitches close the wound, and after two weeks you can scarcely find a scar. The sexual desire is not interfered with and orgasm is complete.

After sterilization, the feebleminded, and some of the insane, may be allowed to go home where they will not be an expense to the State, and will not be a menace to the public by giving to posterity a line of feebleminded or insane children.

Correspondence

An Explanation of Part of the Report of the Committee on Training of Laboratory Technicians.

RICHMOND, VA.,
DECEMBER 27, 1929.

TO THE EDITOR:

The special Committee of the State Society appointed to investigate the laboratory technician situation in the state, in trying to keep information about the schools where these workers may be well trained, has seen fit to criticise one of them as inadequate. In our report to the House of Delegates at Charlottesville, which is published on page 550 of the November, 1929, issue of our state journal—the VIRGINIA MEDICAL MONTHLY—the location of this is given but it is not called by name. Out of fairness to other private well conducted laboratories in Clifton Forge, it seems wise to now state that the criticism is aimed solely at the Alleghany School of Laboratory Technic conducted by one who is not a physician. Surely our state cannot afford to fall below the standards set by the American Society of Clinical Pathologists for training schools for laboratory technicians and hence this Committee, in trying to maintain standards, finds it necessary to be critical.

For the Committee:

CHARLES PHILLIPS, M. D.,
Chairman.

Better Health for Beginners in School.

RICHMOND, VA.,
DECEMBER 23, 1929.

TO THE EDITOR:

During the past few years, the Bureau of Child Health of the Virginia State Department of Health, under the direction of Dr. Mary E. Brydon, has been endeavoring to perfect a plan whereby children who are to enter school for the first time can be given a health examination and the treatment needed to put them in better physical condition before they start to school. Numerous conferences have been held with committees of the Medical Society of Virginia, the Virginia Pediatric Society, and the school superintendents appointed to work with the Bureau of Child Health.

It seems generally agreed that the examinations and treatment should be in the hands of the family physician rather than in those of State employed clinicians. Last year 276 clinics were held by family physicians, and 1,650 children were examined. Incidentally, 1,532 of these children were found to have one or more defects. Last year's work demonstrated the need for a more definite plan of procedure, and in order to further the development of such a plan, a joint meeting of the three committees mentioned above was held in the offices of the State Health Commissioner, Dr. Ennion G. Williams, November 26, 1929. At this meeting, after a frank discussion of the situation, the following resolutions were adopted:

"RESOLVED, That the responsibility of the health examinations of the pre-school children be placed in the hands of the Division Superintendent of Schools of each county and the local board of health and that they cooperate with the local doctors.

"RESOLVED, That we endorse the report of the Child Welfare Committee of the Medical Society of Virginia* and that we recommend a fee to be charged for the health examination of the pre-school child such as the doctors and superintendents see fit to recommend.

"RESOLVED, That we endorse the blue and two white card system now in use by the State Department of Health for the health examination of the pre-school children." (The white cards are for duplicate records of the history and physical examination, one to be kept by the doctor, one to be sent to the superintendent of the schools. The blue card is the record of the examination to be taken by the pupil to the teacher on the first day of school.)

The definite assumption of the responsibility for this program by the school superintendents and the local boards of health should give it a powerful impetus. Such a movement promises much for the improvement of child health, for the improvement of school attendance and learning ability of the child, and for the furtherance of the idea of the need for periodic examinations of children in the minds of both the laity and the medical profession.

Early correction of physical defects undoubtedly will prevent a great deal of physi-

*Virginia Medical Monthly, November, 1929, page 547.

cal disease and mental anguish, and proper advice concerning food, habits and general living conditions, given to the mother by the doctor, will promote better physical and mental health. It is work of this sort that the physicians must assume if they wish to prevent so called "State medicine."

BASIL B. JONES, M. D.,
Chairman of the Joint Committee.

Informal Comment on Doctor Gill's Navy Medical Article.

CINCINNATI, OHIO,
DECEMBER 16, 1929.

TO THE EDITOR:

Having read with much interest and understanding, Dr. W. Armistead Gills' article in the December, 1929, VIRGINIA MEDICAL MONTHLY, "Why The Health of the U. S. Navy Cannot Be Compared With Civilian Health and Other Military Institutions," a little friendly comment may be of interest to civilian practitioners of medicine. This is based on some twenty years' residence in Washington, D. C., in the shadow, as it were, of Army and Navy headquarters, plus about ten years as an officer of the regular Army Medical Corps. From this broad personal observation and experience with both Army and Navy medical conditions, I know whereof I speak. The same points Dr. Gills makes with regard to Navy Medical Service, apply almost identically with the Army Medical Service. I know Dr. Gills to be honest and sincere in his efforts to improve the quality of Navy Medical Service, and I agree with the points he makes most emphatically; but I must sadly feel he assumes a Don Quixote role in any effort to reform the Army or the Navy, Line or Medical. It simply cannot be done, and it would be just as easy a task to make John Chinaman as a Nation see and live as we do, as to change one spot on the military leopard. Step from civil life into the Army, or into the Navy, and you immediately step into a foreign country. From that day, you become a Roman and see and do as the military Romans do, or you simply never get to "belong;" or to put the proposition another way, get in step and stay in step with the military machine always and for always, or you are hurtled back into civil life, disillusioned perhaps; certainly wiser in more ways than one. Military and naval "experience" is a great teacher for the "cit."

General William Mitchell of Air Service fame was unfortunately twenty years ahead of his time, and foolishly tried to impress his AIR views on the military machine. They promptly crucified him with all military power and pomp. It is true that General Mitchell's efforts brought some improvement in the Air service of both Army and Navy, but it surely wrecked the General's military career. That has been the fate and will be the fate of any well-intentioned reformer of either Army or Navy, who creates enough stir; and beyond doubt, if Dr. Gills' efforts to reform the Navy Medical service annoy "higher authority" enough, they will crush him. Being on the retired list of the U. S. Navy confers no immunity from lethal punishment, as I hope Dr. Gills knows.

There are ways and ways to punish an officer, both in the Army and in the Navy. A naval medical officer of good training, earnest and sincere, was detailed some twenty years ago to St. Elizabeth's Insane Asylum in Washington, the great Government insane institution, with the idea in particular of making a special study of Navy insane patients there. This doctor was a student and a hard-working one; and he soon not only had a good working knowledge of insanity in general, but, in particular, special knowledge of all the details on practically every Navy insane case in St. Elizabeth's. Some of these cases of alleged insanity he found not to be insane at all; some were temporarily unbalanced from brutal treatment and persecution by higher officers at various navy stations; and some were simply railroaded to St. Elizabeth's as extra-legal "punishment." Some of these Navy cases were improperly diagnosed and improperly treated. The young naval surgeon, as he began to study these cases, began to write articles for publication in military-naval medical publications and perhaps in other professional journals, describing some of his discoveries. Did the Navy Medical high command welcome discovery of these "mistakes" and suggested measures for their correction, etc.? Not noticeably so. The young navy surgeon who took his duty too seriously, became a marked man and he has been a marked man to this day. Promotion in the Navy is by "selection" in the higher grades. If you stand in with higher authority and have made no influential ene-

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mies, you may go up in due course to higher ranks by "selection," but not otherwise. This young Navy surgeon went up as far as he could go by seniority promotion, and then he struck the "selection" barrier, and there he has remained ever since, while some hundred junior medical officers have been "selected" (promoted) over him. Naturally, this young Navy surgeon feels he has been wrongfully treated; he only did his duty, but he did it too faithfully to suit higher authority.

The situation in the Army is precisely the same.

Medicine and Militarism can be made to mix, but not to the advantage of Medicine. The medical officer in both Army and Navy becomes somewhat of a hybrid; part doctor and part military man; and the longer he remains in Service the more military and the less medical he becomes. Military rank is everything in the Service. One great trouble today is that the Army and Navy simply cannot obtain competent doctors to man their forts and ships. A decade or so ago when vacancies were few and far between, only a well educated, well trained young doctor, physically perfect, had any chance to "pass" the entrance examinations for the Army and Navy medical services. To pass the Army examination in those days was considered a real feat by the young civilian physicians, and only the higher standing graduates of hospitals had even the courage to attempt them. To pass the Navy examination in those days, was considered almost as difficult a feat. Certain physicians in Washington conducted a most lucrative Army-Navy Quiz for the sole purpose of preparing hospital graduates for Service examinations. In 1908, for example, some 170 young physicians, many of them Quiz prepared, went up for the Army examination. Less than eighty were found physically qualified first; if physically qualified, then you were allowed to take the professional qualification examination and not otherwise. Of the eighty odd candidates, about sixteen passed all professional subjects with two or three promising candidates admitted to the Army Medical School, subject to re-examination in deficient subjects. Then followed a grilling course at the Army Medical School, where some twenty-nine out of thirty-five finally made the grade. The Navy system was somewhat alike, except that the candidate was told from day to day whether to present for the next day's examinations; if deficient at any stage, he wasn't told to come back for more; but to go home.

It became impossible for the Navy to man its ranks this way, as so many young physicians became disgusted with Navy life and resigned after a year or two at most. Then the Navy adopted a cradle-robbing expedient, whereby the higher standing senior students in leading medical schools were offered a commission as navy doctors immediately upon graduation from medical college. Then they were sent to various Navy hospitals for hospital work and polishing up in the duties of a naval surgeon. From patriotic motives, thousands of doctors flocked to both the Army and Navy for the World War; but as soon as peace was declared the great majority had had their fill of military life and got back into civil practice again. The bars for entrance to the regular Army and Navy medical corps were lowered and then some; they took anybody and everybody with an M. D. degree, and some got in with less than that, one or two rank cultists making the grade in some way or other. Since the World War, the Army medical corps has been almost entirely depleted of ambitious, competent doctors; and there remain only the young medical student route medical officers, and a sundry assortment of civil practice failures, who looked upon Uncle Sam as a heaven-sent surcease from the competition of present-day medical practice. You couldn't pry one of those old boys loose from his newly acquired Government job with a load of dynamite; and by the same token they couldn't hold the ambitious, competent doctors in Service, who knew they could stand up and make good in civil practice. Today, the Army Medical Corps at least contains hundreds of medical officers who would resign tomorrow if they just saw an opening in civil practice; and no doubt the Navy is in the same fix. Of my own class of thirty-five members at the Army Medical School, all but two or three perhaps were physicians who had attempted civil practice first and lacked the stamina to stay with it. By a queer turn of fate, one of the "discards" sent back into civil life is today one of the leading orthopedic surgeons of the country, while another who had too much speed, social and otherwise, to please the Medical Corps high command, is today a leading New York surgeon. So it goes. One highly trained

Eye, Ear, Nose and Throat specialist vainly sought court action to force the Army to accept his resignation a year or two ago.

Today, the Army has adopted the Navy system of medical cradle robbing; the higher standing senior students in leading medical colleges are approached with offers of Internships in Army hospitals, at what must look like BIG MONEY to the average medical student. A certain percentage of these recruits, as with the Navy, will succumb to the allurements of military medical service and go in the permanent establishment.

Today an Army commission, Line or Medical, is good for just one year or less. Any officer who in any way incurs disfavor of superior officers may be arbitrarily and automatically placed in "CLASS B," and railroaded from the Service branded for life with the stigma of "Unfit and professionally incompetent." There is no appeal from this arbitrary and usually malice-inspired official decapitation. Civilian doctors entering the Army are uninformed of the practical workings of this unjust and prussianistic system.

How can either the Army or the Navy personnel expect first-class medical service from half-baked young medical students, whose medical training is finished up by medical officers, who themselves were never competent medical practitioners? The Army medico is held in poorly disguised contempt by the Line Officer, and merely tolerated as a necessary evil; and Navy snobbishness is still worse. Army and Navy officers who have the wherewithal to pay the fees of competent civilian doctors, never bother about FREE military medical service when they can obtain for themselves and families the services of trained doctors, surgeons and specialists in civil practice. Who can blame them? This hurts the pride of the military medical officers of the true military caste, who speak with scorn of the vulgar "civilian practitioner." If any ordinary doctor doubts this state of affairs, just let him walk into the average army or navy post and see if any fatted calf is killed for him. Of course, if a Mayo or some other civilian doctor of eminence essayed the same, it would be a different proposition.

Both in the Army and the Navy, the medical high command realizes that something beyond military life and rank is necessary to make a competent doctor; and from time to time selected medical officers are sent to the various medical centers to take post-graduate work in the various specialties. This helps, of course, but of what avail is it for a man to perfect himself say in Surgery; or as an Eye, Ear, Nose and Throat specialist; and then be assigned to duty say with a Field Hospital, or an Ambulance Company; or assigned to some jungle post in those dear old Philippines; may Japan come and get them soon if not sooner. An ambitious Army medical officer took his degree at the Rotunda hospital in Ireland, studying for about a year at his own expense to become an Obstetrician; and then was assigned to an Army post that averaged about two and one-half confinements per annum. One of the most competent oculists ever in the Army aroused the jealousy of his Army confreres by his superior attainments; and as a reward was detailed to a God-forsaken, all but abandoned old Indian fort in the wilds of Arizona. The "pressure" produced his resignation in disgust, and today he is one of the leading oculists of the Pacific Coast; the Army's loss and civil practice's gain. Another medical officer perfected himself as an oculist in Vienna and Berlin; and on return to this country was rewarded by assignment to a post where one refraction a month was a big month's eye work. So it goes, in the Army and in the Navy. Is it any wonder that the average military medical officer loses ambition and everything else worth while in a doctor? All he has to do is to keep in step; do nothing and say nothing to offend a superior; work or loaf along, he gets the same pay check from month to month; and in due course will be promoted by seniority.

What are we going to do about this unhappy situation? How are we going to give the Army and the Navy better, more humane medical service? Nothing is my verdict. It cannot be done.

Dr. Gills tells us how to attract the BEST doctors to the Navy, and to the Army also. You cannot do this by anything the military service has to offer in peace time. Go to any doctor who is becoming established in private practice and try to talk Army or Navy to him. He cannot see it for a minute. The only doctor you can interest in military medical service, is the young medical student just out of college or hospital—with no money to start practice on; no opening in sight; and perhaps

with a small family and the wolf beginning to sniff at the door. This young doctor may listen to the allure of military medical service. Then approach the doctor temperamentally or otherwise unfit for the competition of private practice; whost practice, if any, is dwindling instead of increasing normally; and he may grasp at the "opening" as a drowning man grasps at a straw. Get him in the Service and he straightway finds himself associated with hundreds of other civil practice failures; all blaming this and that for lack of success; all disillusioned with the glamour of military service as is; all secretly hankering for civil life again if they but dared to take the leap. Sprinkle in with this aggregation a certain number of young medical students, inexperienced and untrained in medical practice; and you have an *esprit de corps* that is conspicuous principally by the utter absence of the *esprit* portion. It is every dog for himself and Heaven look after the hindermost.

Pay increase won't solve the problem. Both Services work propaganda overtime for pay increase; they hornswoggle Congress into one pay increase and then start a new propaganda for more pay. The average Army and Navy medical officer today is paid far more than he would ever earn in private practice; but freedom is something you cannot buy with money; and the average medical officer, unless all hope and ambition is dead, secretly longs, ever longs for the freedom of civil life and practice; freedom from the irksomeness of military restrictions, customs and life.

Get "in bad" with a superior officer in either the Army or the Navy, and he will spend more time figuring ways and means to torture and to crucify you by slow degrees than the Chinese ever thought of. There is something inherently cruel about any military system; and if there is any way to immunize the under dog from this mistreatment by higher rankers, I do not know how it is to be done.

Annual Health Reports of the Army and Navy Surgeon-Generals are a total loss for all practical purposes. They show just what these gentlemen want to show; and they do not show what they do not want shown. If they want black where white should shine, black it is; and *vice versa*. As a rule, Army and Navy health statistics look big on paper; they are made that way on purpose. Padded would be too rough a term; just illustrated to convey the precise picture "higher authority" desires.

Readers may recall what wonderful statistics the Panama Canal Zone showed. Statistics showed that you lived longer and better in Panama than in New York, Washington, or most any old U. S. A. city. Wonderful work by the Army Medical Corps, when it is recalled what a death trap Panama used to be. How did they do it? Well, if you happened to be working in Panama and came down with illness or injury that appeared would be fatal, you need never worry about dying in Panama. No sir. You were promptly bundled on the first outgoing ship and sent right away from that place. If you insisted on dying, all right; but that death was not going to be chalked up against Panama. If you died in New Orleans, your decease went to spoil the health record of New Orleans; if New York was where you died, New York had to take the credit for your death. Of a verity, those Panama statistics were and are wonderful. If you listened to Army propaganda, it was actually healthier for a white man to live in the Tropics than in the Temperate Zone. Colonel Charles E. Woodruff, one of the greatest scientists who ever honored the Army Medical Corps with his presence, tried to allege as to how this was all wrong; that the white race would never be able to colonize the Tropics successfully. This was most decidedly not what Army "higher authority" desired. The Tropics had wrecked Colonel Woodruff by this time; and the Army Medical Corps neatly crucified Colonel Woodruff by sending him back for more Philippines. In one way or other, they will crucify any officer who too urgently and too persistently utters views that are not officially desired.

The Average Mr. Congressman knows nothing about the Army or the Navy; much less about Annual Health Reports; and he is too busy with matters of State, and with mending his political fences at home, to bother about whether Private Smithers of the Navy is diagnosed rightly or wrongly. If Private Smithers dies, bury him according to regulations; if he becomes permanently disabled, exitus him from the Service in the manner provided for by Army or by Navy regulations. Then get another able-bodied recruit to take Private Smithers' vacancy. And that is that.

If Private Smithers dies because some medi-

cal officer wrongly diagnoses his case, that is naturally to be regretted, but the medical officer's pay goes on just the same.

Suppose you follow Dr. Gills' suggestion and write your Congressman all about it; of which you really know nothing except what Dr. Gills has so ably outlined. His secretary will acknowledge your communnication with a neatly typed form letter; and it is doubtful if the Great Man ever sees your letter unless you are somebody in the District.

Surely President Hoover is much interested in both health and law enforcement; but try to get a letter before President Hoover personally. The System takes care of that; and your time and energy is a sheer loss.

Theoretically then, Dr. Gills' suggested remedy is excellent; well thought out and most commendable.

But in Practice It Simply Cannot Be Done.

If any Super-Man of a Doctor can fashion any method to break through this military-naval system and improve the medical service of either Army or Navy, I humbly take my hat off to him. And I hope he is a Virginia doctor.

J. B. H. Waring, M. D.,
U. S. Army (retired.)
7 East McMillan Street.

Control of Venereal Diseases.

Replying to a circular letter issued by the State Health Commissioner in consequence of resolutions adopted by the Social Hygiene Council, an association affiliated with the Medical Society of Virginia and composed of doctors who are members of the Society, Dr. C. B. Greear, of Honaker, wrote the following letter which he has consented to have published.

The State Health Department has consistently recognized venereal disease as a problem requiring solution; but it has not been able to decide upon a proper method for the solving. Everybody realizes the importance of the subject but its handling is a controversial topic. It has been a consistent policy of the Virginia Department of Health to utilize all valuable agencies for the prevention of disease while leaving to the medical profession matters of cure. It has never been demonstrated to the department that an exception should be made for venereal diseases. Nevertheless, it would seem desirable that an opportunity be afforded to the medical profession in Virginia to express an opinion on this important subject; and it is with this thought in mind that I request the Editor of the Monthly to publish Dr. Greear's communication.—*State Health Commissioner.*

Dr. Greear's Letter on Venereal Disease Control in Virginia Through Treatment and Publicity Measures

The Virginia Social Hygiene Society is certainly to be congratulated upon their efforts to cope with the venereal situation in our State, this hydraheaded monstrosity, gnawing at the vitals of Nation and State. It will be my pleasure to assist in any way I can, in every constructive effort to stamp out this menace to the health and happiness of mankind.

The Lord only knows how many venereals I will be called upon to treat within the next twelve months. As to the medicines, I would suggest that you place in stock, I would much prefer a highly authoritative committee be appointed to work out a program of treatments, to which I would gladly conform.

In this connection the following are some of the questions, among others, which have presented themselves to me:

As a profession, revered and respected as we are, have we done our best to safeguard our people against the ravages of venereal diseases?

Can we consistently recommend taxation and donations for the erection of immense sanitaria and hospitals for the care and treatment of conditions which are complications to venereal diseases which we as a medical profession should have prevented by timely and sane precautions?

While the wrecker, venereal disease, is permitted to run rampant throughout our fair America, are we doing our duty to suppress and prevent the venereal peril, the greatest cause of death, when all complications are taken into consideration—at least one-third more fatalities to its name, than that of the great white plague, tuberculosis?

Can we, as a profession, consistently advocate taxation and donations for hospitals, asylums and sanitaria, while comparatively fruitless efforts are being made use of, to prevent the diseases these institutions are called upon to treat and care for?

Has or has not the public a right to demand that we remove the cause of these leprous con-

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ditions, rather than make demands upon them for the payment of fees that are adequate to meeting our requirements for treating them for something they should be protected against?

Providing statistics may mean any thing. It looks as if we, the medical profession, have certainly fumbled the ball in the efforts being used to treat and eradicate venereal diseases in Virginia, and throughout the Nation. Col. Veder, of the U. S. Army, estimates 20 per cent of the population from which our soldiers are recruited have syphilis. It is estimated that the negroes of Virginia have about double the amount of that of the whites. Added to this is the staggering statement by gynecologists, that 75 to 85 per cent of all major surgical operations done on women are due to gonorrhea and complications.

Possibly the time has not yet arrived but, so sure as civilization survives, our progeny must meet this leprous situation we now neglect, round the turn of the road. Will they meet it with gratitude to the medical profession now extant, or will they meet it with contempt for the inefficiency we have used in safeguarding their interests, venereally speaking?

Medical examinations of prostitutes—a barbaric relic of ignorance, licentiousness and graft—quarantine and, last, but not least, prophylaxis, are being made use of to protect humanity against the ravages of venereal diseases. These methods have not proven adequate, evidently, and yet innocent women and ofttimes children are subjected to exposures and infection by these loathsome diseases, the most diabolical plague with which the human family is permitted to suffer and die. We face such a situation as physicians, our hands tied with a form of medevial ethics, requiring us to hold inviolate the confidence vested in us by these venereals.

The question is whether or not the time is or is not approaching, when venereal diseases must be dealt with in a different manner, if the generations that follow us are to be safeguarded against these fearful and devastating diseases. Theoretically, quarantine is the solution but, due to the dismal failure of quarantine, practically it has proven ineffective. Seemingly, we are devoting our time and attention to the care and treatment of diseases, the names of which we are not ashamed of. If hell has been paved with good resolutions, the venereal situation would cause us to wonder if it hasn't been covered with prudery.

An act of legislation, subject, of course, to constructive criticism, has occurred to me, while pondering over the venereal situation as it now confronts the medical profession. I will pass this suggested legislation on to you for what it is worth:

A Venereal Treatment and Publicity Program

Having thoroughly circularized the State, place highly efficient venereal clinics, centrally in each Congressional District. Treat all these patients for twelve months free of any charge. At the expiration of twelve months, require each physician, under oath, to furnish name, address and the disease for which each of his venereal patients is being treated. At the close of each quarter of a year, revise and delete these lists as indicated. Make it the duty of The State Board of Health to secure and also to publish this data in local papers, in full, also to placard it in the post offices and courthouses in the respective counties where the venereals have their permanent or temporary residence. Revising a publicity list each quarter would perpetuate a publicity program of annihilation of venereal diseases.

To be sure, the medical profession would "raise heck" by corporating with such a legislative program, but our venereals have done this about long enough. It is a long way to Tipperary, but there is a way where there is a will, and especially is this true if the way is right.

Physical Examination of Federal and Civil Pilots Endorsed.

Department of Commerce,
Aeronautics Branch,
Washington, D. C.
December 21, 1929.

To the Editor:

The attached resolutions were passed by the American Medical Association at its stated assembly held at Portland, Oregon, in July, 1929. It is believed that these resolutions are of sufficient interest in view of the rapidly increasing number of physicians designated as Medical Examiners to warrant publication in your journal.

You may be interested to know that all applicants for federal pilot licenses, either for

flying or for training as pilots, must pass physical examinations before physicians designated by the Secretary of Commerce. They must likewise be re-examined periodically. These examinations cover a rather detailed examination of the eyes, a brief examination of the ear, nose and throat, equilibrium, a general physical examination, and a detailed examination of the nervous system. There are now about 750 Medical Examiners so designated throughout the country. All these examinations are reviewed in Washington where the applicant is finally certified as qualified or disqualified for the grade for which he has applied.

L. H. Bauer, M. D.,
Medical Director.

Resolutions.

Whereas, The Aeronautics Branch, Department of Commerce, has organized a medical service for the physical examinations of civil pilots and prospective pilots, in the interests of safety; and

Whereas, The physical standards adopted are in keeping with those adopted universally, and have reduced aircraft accidents from physical causes to a minimum; and

Whereas, The department has required these examinations to be made only by designated physicians in the interest of uniformity and control and in accordance with the custom adopted for the Army and Navy and in other countries; and

Whereas, The selection of examining physicians by the department has been based on training as flight surgeons or its equivalent, or on group examinations by specialists, a high standard of examination has resulted; and

Whereas, The department requires that all examiners hold the degree of Doctor of Medicine, be licensed to practice medicine under the laws of their respective states, and further requires that the appointees be recognized as ethical practitioners in their respective localities, thereby supporting the high standards advocated by this Association; be it

Resolved, That the American Medical Association, at its stated assembly in 1929, endorses the medical work of the Department of Commerce, its methods of physical examination and its method of selection of medical examiners, and urges that the same high standards be continued and offers the support of the American Medical Association in furthering the specialty of aviation medicine; and be it further

Resolved, That a copy of this resolution be sent to the President of the United States, the Secretary of Commerce, and the Secretary of each State Medical Society.

Miscellaneous

The Tuberculous—A Plan for Their Better Care.

As a matter of interest to our members, we give in this Department the following statement, recently received from Dr. Ennion G. Williams, State Health Commissioner:

We shall ask the next General Assembly of Virginia to consider a proposal to aid in the maintenance of locally established sanatoria for the tuberculous. In order to gain a clear idea of the factors leading us to this conclusion, it will be well to consider the policy which has guided us since the State Board of Health was reorganized in 1908.

One of the first major problems to confront the modern board was how to deal best with tuberculosis which, at that time, was not only the major cause of death but was also the chief contributor to disability. We were directed by statute to establish either by purchase or construction, a sanatorium for the care and the cure of the tuberculous.

When the sanatorium was established in 1909, we faced secondary but important problems—(1) What class of patients should be admitted, and (2) what should be the cost to the patient?

Considering the first of these problems, we were forced to the conclusion that more good could be accomplished for the State as a whole if we would take early cases and moderately advanced rather than the far advanced. The records of other sanatoria had shown that early cases could, in a large majority of instances, be arrested or even cured; and that such cases could be returned to their original environments able to support themselves and competent to act as teachers of good health habits. On the other hand like records showed that the far advanced cases only in comparatively few instances were really benefited by sanatorial stay; and, as a further argument against the admission of the far advanced, these stayed indefinitely at the sanatorium once they had been admitted. Obviously our duty was to do positive good rather than negative; and so it was clearly our duty to take people who could really be helped rather than to take those who gave slight promise of being benefited. Equally obviously it was our duty to serve a large number rather than a small.

Having decided this point, we studied the second question—what to charge. Caring for the tuberculous is a public health duty, but it is not entirely a public duty. It is also individual service. We were led to the conclusion that the best division of expenses would be half and half. Such a sharing of expenses

would make it possible for us to use our appropriation to benefit twice as many people as could be served if the State would have to bear the entire expense. Again, there was a further reason for this conclusion. The care of indigents has always been regarded in Virginia as a local obligation. The State has never conducted poor farms. The General Assembly recognized this custom by enacting a statute which permitted city or town councils or boards of supervisors to pay for patients at the sanatorium—that is, to pay half the costs while the State paid the other half.

While we have endeavored constantly to adhere to the selective plan, it has not been possible to exclude far advanced cases. In fact, these far advanced cases have become so numerous that they have, for several years, constituted a real problem. Year by year, an increasing number of our sanatorium patients are on the infirmaries where they have all their meals served and where they constitute a tax upon the medical staff. They are more expensive to keep, they require so much medical attention that our staffs must be enlarged if the present proportion is increased, they must be kept at the sanatoria so long that early cases sometimes become moderately advanced and moderately advanced sometimes become far advanced before they can be admitted.

We have not been able to turn a deaf ear to those cases. Humanity and intelligent self-interest combine to make it evident that we cannot ignore the far advanced sufferer. He may not be as much a menace to his neighbors as is the earlier open case which is circulating among the people; but he is still a public health problem if he is not trained to look after himself as well as he may and is taught to protect others.

Some years ago, the General Assembly provided us with funds to try the experiment of providing a limited number of free beds—we now have forty of these. As might have been expected, the majority of applications for free beds came from the far advanced class, for advanced tuberculosis makes a patient unable to provide for his own expenses. We have had applications for these free beds far out of proportion to the number available. Therefore, we have been forced to consider some solution for the problem.

At the 1929 meeting of the State Board of Health, the Health Commissioner offered four possible solutions and discussed each proposal:

1. Ask the General Assembly for more money to care for more free patients.

Our experience having shown that from 75% to 85% of our free cases are far advanced, it would necessarily follow that the more free beds we have, unless present facilities are increased, the less the early cases could be admitted and consequently the less cures effected.

2. Ask the General Assembly for appropriations for new buildings as well as for free beds.

There are several objections to this suggestion. They may be summarized as follows:

(a) Far advanced cases, requiring more attention, constitute doubled costs. Not only would more beds for them be required but it would be necessary to increase our facilities for housing and feeding additional employees.

(b) Since tuberculosis is steadily declining, it would not be economical to expend any large sums on capital outlay at our sanatoria until or unless we can feel safe in assuming that the decline shall have stopped. Since we now have no reason for believing that the decline will stop, we cannot conscientiously urge large increases in facilities.

3. Ask the General Assembly for an appropriation to establish a sanatorium or detention hospital for the far advanced cases.

The outstanding objection to such a proposal is that it does not give a definite promise of accomplishing what it seeks to accomplish. The death rate at such a hospital would be so high that people would be afraid to go there. At the regular sanatoria, the death rate is low because there are at all of them fair proportions of early cases in which the mortality is negligible; but even at our present sanitoria the death rate among the far advanced is comparatively high.

4. Ask the General Assembly to provide funds for subsidizing local sanatoria so located that they could serve sufficiently large populations to make them economically practicable and so operated that their standards would conform with the standards set by the State Board of Health.

This plan contemplates the State paying at

such sanatoria just as it does at the State sanatoria, half the costs of maintaining patients. Certainly the State's obligation is the same in both cases. In each case citizens of Virginia are being served and protected.

There are obvious advantages to this plan.

(a) Combining counties or combining cities or combinations of counties and cities would supply the capital outlay necessary for all constructions, thus relieving the State of that burden.

(b) Such institutions would have to be so located that they would be able to serve a sufficiently large accessible population, and thus would make it easier for the relatives and friends of patients to visit them. This would obviate the difficulty so often encountered when trying to get far advanced cases to go away for treatment. They think they are going away to die among strangers.

(c) The subsidizing of such local sanatoria would materially help toward relieving the State sanatoria from the necessity for taking far advanced cases and thus would enable them better to serve their highest purpose, as teaching institutions and as treatment places from which the cured or arrested can return to their homes able to be self-sustaining and helpful to others. The policy of such local sanatoria as have been established has been not to discriminate against far advanced cases but to take the tuberculous at any stage. This policy would have to be continued if State aid were given.

The State Board of Health unanimously approved this plan of local subsidy; and a bill to make this effective will be presented to the next General Assembly. The main features of the bill are:

1. The localities will supply the buildings necessary for the proper housing of tuberculous patients.

2. The buildings will have to be located at a point which, in the judgment of the State Health Department, will afford easy access to a population sufficiently numerous to assure economical administration.

3. The conduct of such sanatoria must be in accordance with the best modern thought regarding the treatment of tuberculosis and must meet the standards set by the State Health Department.

4. The local sanatoria may be wholly free or partly free and partly paid; but in no case will the State be required to pay more than half the net costs of maintaining patients, interest on capital outlay not being considered in such costs; and in no case shall the State's per patient per diem contribution be greater than the per patient day cost to the State at its own sanatoria for patients who pay or who have paid for them half of their expenses.

It is the sincere conviction of the State Board of Health and the State Department of Health that this plan should be put into operation.

Woman's Auxiliary, to the Medical Society of Va.

Work of the Woman's Auxiliary of the Richmond Academy of Medicine.

The following letter is printed to show just how the Auxiliary to the Richmond Academy of Medicine happened to undertake the work it adopted in March of the past year.

Richmond, Va.,
March 7, 1929.

Mrs. Stuart Michaux,
President Women's Auxiliary,
Richmond Academy of Medicine,
Westhampton, Virginia.

My Dear Mrs. Michaux:

I can't think of a group likely to be more interested and more able than yours to undertake a project for the college which it seems to me has a good deal of appeal in it. The Dooley Hospital, which is used primarily for pediatric cases since the Crippled Children's Hospital has opened, has an able specially trained head supervisor and a thoroughly qualified clinician, who gives the major part of his day to the work of the children there and in the outpatient department and who is paid for the present by the Commonwealth Fund of New York City. Recently, the physical equipment at the Dooley Hospital has also been improved, but we do not have a group, such as the auxiliary of the Richmond Academy of Medicine, engaged in a definite program of work for the hospital.

There are a number of organizations, most of them connected with churches in Richmond, which have at times rendered important assistance to the Dooley Hospital and they can be challenged to this same service again if leadership can be secured. It has therefore occurred to me that the auxiliary might be willing to undertake, through its own committees and through the solicitation of aid from other organizations, names of some of which we can supply, furnishing for the present at least such supplies as are named on the inclosed memorandum. These are greatly needed by the children of Dooley Hospital.

As you know, practically all of the cases at the

Dooley are able to pay but a modest sum, much less than the cost of actual maintenance. On that account we must appeal for assistance to those who believe that such children deserve the best attention and consideration which this community can supply.

Mrs. Michaux, I hope very much that this appeal will merit favor with you and your associates. If desired, I shall be glad to confer with you or with the auxiliary itself. We are exceedingly anxious to have you undertake this project if it is at all possible.

Sincerely yours,
W. T. SANGER,
President.

The appeal of this letter combined with the appeal of the proposed project itself needed nothing else to inspire this auxiliary to take up the task suggested. Anxious to do some really constructive piece of social work the ladies felt there could be no more fitting niche for them to fill than this, an opportunity entirely untouched by any other organization in the city at the present time.

Their first concern was to raise funds and they accordingly set about this by planning a card party which netted slightly over one hundred dollars. With this amount, because they were able to buy at wholesale, they purchased enough materials in bolts to make more than five hundred garments and articles necessary to the comfort of sick and convalescent children. These included rompers, dresses, boys' suits, gowns, diapers, crib spreads and blankets, stockings, slippers, etc.

Through their committees they enlisted the interest and help of circles of various local churches and other organizations. Supervised by their committees these organizations took over the making of the garments as a part of their social work. Some of them have also made donations of both money and supplies through solicitation of members of the Auxiliary, the plan being that the Richmond Auxiliary act as a sort of clearing house for all other groups who are interested and wish to contribute in either time or money to the cause.

The Auxiliary is much gratified at the results of their efforts in this short time and expects added interest and a much larger volume of work for the coming year.

The Executive Committee of the Woman's Auxiliary to the Norfolk County Medical Society

Held a very enthusiastic meeting on Monday evening, December 9th, at 8 o'clock, in room 705 Medical Arts Building, with 35 members present. The meeting was opened with prayer by the president, Mrs. W. P. McDowell, after which the minutes of the previous meeting were read by the Secretary, Mrs Rufus Kight. The minutes being approved, the Corresponding Secretary, Mrs. L. B. Scott, called the roll. The Treasurer, Mrs. J. L. Rawls, was unavoidably absent, but sent her report, which was read by the Assistant Treasurer, Mrs. Geo. A. Renn.

Mrs. R. L. McMurran, Chairman of the Portsmouth division of the Auxiliary, made a splendid report of the work being done by her Committees. Mrs. C. L. Harrell, the very active and enthusiastic Chairman of the *Hygeia* Committee, made a splendid report. Mrs. Lewis Berlin was absent on account of illness, but her report on work in the Hospitals was read by Mrs. M. N. King. Reports were then given by Mrs. Southgate Leigh on Clubs; Mrs. Wm. A. Porter, Publicity; Mrs. F. C. Rinker, Sick; Mrs. N. F. Rodman, Courtesy; Mrs. A. A. Matthews, Motor Transportation; Mrs. C. H. Lupton, Telephones; Mrs. Claiborne Willcox, Entertainment; Mrs. C. C. Smith, Health; Mrs. R. H. Peake, Birthday Cards; Mrs. Rufus Kight, Parent-Teacher; and Mrs. A. E. Wilson on Pure Milk and Water.

Mrs. Willcox, a member of the Health and Recreation Committee of the Y. W. C. A., extended a very special invitation to Mrs. R. U. Burges, Mrs. Elmore Jones and Mrs. Geo. A. Renn, as representatives of the Auxiliary, to attend a meeting to be held at the Y. W. C. A. on December 13th. It was decided that during the month of January the members of the Auxiliary would have a luncheon at the Colonial Inn on Freemason Street. There being no further business the meeting adjourned.

EMILY T. ALLEN,
Associate Publicity Chairman.

Some New Year wishes for you, friends,
Hoping that not one of them ends
Till comes the long, long distant day
When you will leave this world for aye.

My first wish that you'll have good health,
My last one that you'll have much wealth,
And sandwiched in between the two
A lot of hopes which will come true.

Plenty of work which you will like,
But not enough to make you "strike";
Friends many, loyal, true and kind,
A happy heart—contented mind.

—*Selected.*

President's Message

To disparage the Medical Profession seems to be a growing custom on the part of certain politicians, and especially certain lawyers, who are trying to get political positions in order to make a decent living. They say: "The ordinary doctor does not keep up to date, he does not know enough to really practice modern medicine, and that in consequence he should not be given public positions such as County Health Officer, or even School Physician."

While most of this talk is propaganda, with the idea of appearing wise and thereby getting votes for themselves or possibly jobs for their friends, at the same time the Medical Profession must be in position to controvert such accusations. Our medical men must be able to show the people that they are trying to keep up, and that they are just as able to take care of these Medico-Political positions as someone brought from the outside. But to do this it is necessary to really keep up with what is taking place in the Medical Profession, and for this purpose we must take Post-Graduate Courses, through which it is comparatively easy to keep abreast with the times.

The Medical Society of Virginia, in conjunction with the University of Virginia and the Medical College of Virginia, is trying to offer such opportunities to its members. On another page you will see the plan which our new Department of Clinical Education is going to put into effect. At a recent meeting held in Richmond it was decided to divide the work into two classes, the first type would take the doctors from their homes. This has already been successfully tried out by our Medical Schools and on the first day of the meeting of the Medical Society of Virginia. The second type would carry the clinics to the home or neighborhood of the doctors. These local clinics would last only one day and would be conducted by men appointed by the Department of Clinical Education of the Medical Society of Virginia, the local profession being expected to furnish clinical cases for demonstration. In order to put this type into effect, it will be necessary for the county medical society to write to Dr. J. Allison Hodges, Chairman of this Department, and ask to be furnished men for the clinic, specifying place and approximate time, and also the facilities which the local society can offer.

It is hoped that we may be able to hold several such local clinics during the coming year and see if the plan is feasible, and how much it is going to cost. Where the local doctors have held such clinics, we hope that they will be encouraged to go off to a clinic held by the University of Virginia or the Medical College of Virgina so as to get more instruction on lines in which they are interested.

This year we want to test the plan presented by our Department of Clinical Education. To make it a success, we must not only have a centrally organized Department with men able and willing to go off and hold the clinics, but we must have local county societies ready and willing to attend the clinics and furnish the necessary material. Unless the local doctors are really in earnest, the clinics will of necessity fail. So the first step in this direction is better county organization and cooperation, which is the basic foundation upon which this project must rest.

If the Medical Society of Virginia can establish such a program, with the help of the county societies, it will not only add to the medical education of our members, but will improve their standing in the local communities by demonstrating that the men are in earnest and are really keeping up with the progress of the times.

I feel sure that the whole membership of our Society is ready to test out this well considered plan which should greatly benefit us individually as well as bolster up the reputation of the Profession in Virgnia.

Charles R. Grandy, M. D.,
President, Medical Society of Virginia.

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Department of Clinical Education

OF THE MEDICAL SOCIETY OF VIRGINIA

Extension Work in Graduate Education.

The scheme for continuance of Graduate Medical Education by local Extension Courses to its members, undertaken at the last annual meeting of the State Society, was initiated on December 4th at the Society's offices in Richmond, at a meeting of interested Committee members and others, as noted below.

This movement appears to have met with universal approval, for its urgent need is recognized by all. It only requires now that the individual members of the Society shall give the movement their personal support to make it effective.

Its application throughout the State will be necessarily slow, but cooperative service always gets results. It is easy to get educated, but difficult for doctors to stay educated—hence this plan.

The methods to be employed have been presented officially to the members of the Executive Faculty of the Medical College of Virginia, the Department of Medicine of the University of Virginia, the Seaboard Medical Association, the Southside Virginia Medical Association, the staff of the Petersburg Hospital, and by request to the Negro physicians of the Lower Peninsula, and all of these have given their enthusiastic endorsement to the proposed plan.

In brief, this plan for the Continuous Medical Education of general practitioners consists of two main methods of Clinical Education by Extension Courses, one through the Medical Colleges of the State, and the other through the component, district and group Societies, functioning through their regional hospitals in the different Councilor Districts, and every effort will be made to supplement and strengthen existing organizations doing similar work in the State. It is expected that all of these will function eventually through the Department of Clinical Education of the Society.

The general plan for the Department of Clinical Education of the Medical Society of Virginia is as follows:

1. Major features:
   a. Carrying, through the Department of Clinical Education, the progress and recent advances in Medicine and Surgery by means of Diagnostic Clinics, Clinical Reviews, etc., in certain hospitals, mutually selected, to the doctor in his own community;
   b. Post-Graduate Educational and Clinical Courses by the Medical Colleges of the State; and
2. Collaborative features:
   a. Hospital and Laboratory exhibits and privileges extended by the District and City hospitals on certain days to doctors in their immediate vicinities, and regularly scheduled each week, and published monthly in the Society Journal:
   b. Journal Clubs and Correspondence Courses, published at intervals in the Society Journal, on subjects requested by members;
   c. Later on, radio addresses on Medical and Surgical progress to doctors, and the public occasionally, by doctors at different radio broadcasting stations throughout the State;
   d. An interchange of Clinicians from one district, or city, or college to another, as occasion offers;
   e. Ultimately, these advantages and privileges to be given to the Negro physicians of the State, if desired, as far as practicable; and
   f. Other methods of practical Clinical Education will be used, as opportunity affords, to meet existing needs in special localities.

The central idea of this whole scheme of Clinical Education is the establishment of the Department of Clinical Education of the State Society with an active Executive Secretary. It will act as a supply and exchange station for information and correlation of this work; the component Medical Societies of the State being the vitalizing factors, the ten Councilors of the Society, representing the ten Congressional districts of the State, being the Advisors, and the State Medical Society acting as sponsor and the connecting link between these units through the Department of Clinical Education, composed of seven members, and aided by the Advisory Board, composed of members of the Society's Standing Committees on Med-

ical Education and Hospitals, and Scientific Work and Clinics.

Suggestions by members of the Society for the further perfection of this general plan will be appreciated by the new Department, and definite plans for the initiation of this work will be formulated by the Department of Clinical Education of the Society at a meeting to be held subsequent to the mid-winter meeting of the Councilors in Richmond.

Since the organization meeting of the Department of Clinical Education, when Dr. J. C. Flippin was elected as the representative of the Department of Medicine of the University of Virginia, he has decided, although personally much interested, that it would be better for the Chairman of their local Committee on Clinics for practitioners, Dr. Lawrence T. Royster, to represent the Faculty as the University's representative, and he has been formally nominated by faculty vote. Accordingly, Dr. Royster will be elected at the next meeting to represent the University on this Department.

The Department desires publicly to thank Mr. George B. Zehmer and his associate, Mr. George W. Eutsler, of the Extension Department of the University of Virginia, for the presentation of their concluding report on "Post-Graduate Medical Education in Virginia," comprising one hundred pages of timely and most valuable information, which will be of the greatest assistance to this Department in its future work. It wishes also to express its appreciation of their pronounced interest in this work, and its thanks for the promised services of Mr. Eutsler as Acting Executive Secretary. With this excellent additional cooperation of specialists, it is believed that the work now undertaken, can be progressively and scientifically developed.

All members of the State Society are requested to write for any information desired on any subject relative to these Extension Courses in Graduate Medical Education, either to the Acting Executive Secretary, Mr. George W. Eutsler, P. O. Box 707, University, Virginia, or to the Chairman of the Department of Clinical Education, 5 East Franklin Street, Richmond, Virginia.

Organization Meeting of the Department of Clinical Education of the Medical Society of Virginia.

In response to call from Dr. J. Allison Hodges, Richmond, President-elect of the Medical Society of Virginia, about twenty doctors met at the Society's offices, Richmond, on Wednesday evening, December the 4th. Those in attendance represented the officers and councilors of the Society, members of interested committees, the two medical colleges of Virginia, the State Department of Health, hospital officials, etc. Upon request of Dr. Hodges, the president, Dr. Charles R. Grandy, of Norfolk, presided.

In addition to the President and President-elect, those present were: Drs. J. W. Preston and P. St. L. Moncure, of the Committee on Medical Education and Hospitals, Drs. John S. Horsley, Jr., and J. Edwin Wood, of the Committee on Scientific Work and Clinics, Drs. J. C. Flippin and Manfred Call from the two medical schools, Dr. E. G. Williams, State Health Commissioner, Drs. R. D. Bates, Alex. G. Brown, Jr., Stuart McGuire, A. L. Gray, W. Brownley Foster, N. T. Ennett, William F. Drewry, Chas. L. Phillips, Mr. George B. Zehmer and Mr. Geo. W. Eutsler of the Extension Department of the University of Virginia, and Miss Agnes Edwards, Executive Secretary of the Society.

Dr. Hodges, upon request of the President, explained the purpose of the meeting, which briefly was to decide on the best and most feasible plan for bringing to our members some plan for continuous clinical educational facilities, in addition to those offered by the two medical schools in their post-graduate courses each year. The idea is likewise to carry instruction to members of our Society where they cannot arrange to attend existing courses elsewhere, and every effort will be made to supplement and strengthen existing organizations doing similar work. This work is undertaken as the result of the report of the Committee on Medical Education and Hospitals (page 545, November, 1929, issue, VIRGINIA MEDICAL MONTHLY) at our recent meeting in Charlottesville, which report our House of Delegates unanimously moved should be adopted. Dr. Hodges read several letters from various sections of the State which showed

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that many members are already interested in this project.

The following topics were discussed:

1. Upon request of Dr. Hodges, the first matter to receive attention was giving a definite name to the Bureau. After an interesting discussion, the name adopted is "The Department of Clinical Education of the Medical Society of Virginia."

2. Dr. Stuart McGuire was asked to express his opinion as to the best method of securing the cooperation of regional hospitals for clinical meetings, and for securing the names of those hospitals (private or public) willing to cooperate. He stated that there was no doubt in his mind but that hospitals generally would be perfectly willing to cooperate and glad to put on special courses, but he felt there would be plenty of time to arrange this part after other details had been worked out.

3. Next followed a discussion of the length of time and dates for the clinics. The representatives from the colleges were asked to arrange their post-graduate courses so that there would be no conflict, as some doctors might wish to attend both courses. One suggestion was that programs of the county and district societies might be arranged so as to have invited guests speak at an opening session one evening and then clinics and operations might be held the next morning, with lunch to follow. A moderate charge might be made for the lunch or for laboratory fees, it being thought that interest is increased where some charge is made. Some one suggested that there be day and night sessions only, where clinics are desired. Mr. Zehmer being asked what plans were adopted in other states, in accordance with report presented by his department, said that in Michigan, where the plan had worked out especially well, they had started with one day clinics and had increased the sessions to two and three days in some of the counties, districts and larger cities. Dr. Preston told of the clinics which had been held by the Clinch Valley Medical Society and which he attended when president of the State Society. He said that they held their clinics mostly in the afternoons, and followed with a supper. They had been so enthusiastically received, that the Society had put them on again. Each man conducting a clinic was given one hour. A letter from Dr. C. B. Bowyer, fully describing these clinics, was read. In view of the interest which has already been shown in the Fourth and Ninth Congressional Districts, Dr. Grandy thought that, as a trial, clinics might first be put on in these two districts, in addition to those by the colleges, and perhaps in Norfolk as one of the larger cities, these being arranged so that there would be no conflict as to time. Dr. Hodges thought the Department might communicate with the component societies and be guided in some measure by the action taken by them. He felt that the initial time allowed for these meetings might be a night and day, day and night, or only a day meeting, but it was decided to defer action on this matter until a little later and leave the dates to those locally interested.

4. As to the best way of cooperating with the colleges, Dr. Call said that the Medical College of Virginia would be glad to cooperate with the Department in any way possible.

Dr. Flippin stated that they had had three years' experience with these courses. They started in an experimental way and quizzed the doctors as to the time they would wish given to the courses. Some could stay a week but the majority favored a two-day and one-night session. Dr. Flippin said that in the courses given at the University of Virginia, the aim had been to keep away from reading papers and from operations. They demonstrated cases, answering such questions as were asked. Dr. Wood said that he felt the two day clinics worked well as they permitted doctors in the various sections to so arrange their work that one might attend one day and another the next. He said the majority of those attending their courses had been in a radius of fifty to sixty miles from the University.

Dr. Grandy said it was possible we would come to two types of courses—one through the county societies and the other through the colleges and larger hospitals of the State.

5. The best way of getting clinicians was next discussed. Some one suggested that volunteers might be asked for but it was stated that this would be a dangerous precedent to establish and that the clinicians should be carefully selected by the Department. The need is for men who can stand up and talk and who will not have to read papers. Dr. Brown, asked for an opinion on this subject, said he

thought the most feasible plan would be for some one to develop the clinics and arrange the dates to suit the localities. Then, after the local men had secured the cases, a suitable man should be selected for demonstrating them. Dr. Williams said that Dr. Hodges, as this year's chairman of the Department, would be the man to do this. He said that the State Department of Health would be glad to arrange for a T. B. clinic. Dr. H. G. Carter, when superintendent of Piedmont Sanatorium, had several of these for the colored doctors. The Board of Health would do this also for the white doctors of the State and would take care of about twelve over night. They would like to have Dr. Charles Phillips take care of the pathological work in connection with such a clinic and perhaps he might arrange an autopsy. Also, if material is gathered, Dr. William F. Drewry is especially qualified to have a psychiatric clinic.

6. It was decided that it would not be necessary to have a discussion of methods of operation as that would be the work of the Department.

7. The question of the use of the radio in this work was also referred to the Department.

8. It was decided not to ask Legislature for assistance at this time, as it would be better to wait until we have accomplished something. Dr. Flippin felt that it would be inadvisable even then, except through some organized department. Dr. Ennett stated that North Carolina received help in this work through the appropriation made to the State Board of Health.

The question was raised as to whether or not the Department should offer courses for the negro doctors of the State. The general opinion seemed to be that we should take care of our own members first and come to this later. Dr. Phillips said that if a program could be arranged for the negroes, he believed funds would be available from outside. Dr. Foster said that the negro death rate in Richmond was higher than for the whites so he felt that the training of the negro race was of vital importance and hoped the Department would bear this matter in mind. Although it was thought better to concentrate upon our own members this year and to see how the plan works out, it was decided that, as the negroes are so intensely interested in this plan, it might be possible to give the clinics for the whites and negroes at the same time, when the machinery gets to operating, if the funds are available for both.

Dr. Grandy requested the Department not to forget to use the MONTHLY for as much of the publicity work as possible, as this would help to arouse interest throughout the State.

The meeting adjourned, that the Steering Committee might select the membership of the Department of Clinical Education.

Department of Clinical Education, Medical Society of Virginia.

The members of the Committee on Medical Education and Hospitals and the Committee on Scientific Work and Clinics of the Medical Society of Virginia, with Dr. J. Allison Hodges, Richmond, President-elect, as chairman, then met in the Society's offices, December the 4th.

Mr. George B. Zehmer, of the Extension Department of the University of Virginia, gave a very brief resume of his final Report on Post-Graduate Medical Education in Virginia, which he stated covered about 100 pages and said that credit for the special work on this report was due Mr. George W. Eutsler, of the Extension Department, who was also attending this meeting. On behalf of the Society, Dr. Hodges thanked Mr. Zehmer and Mr. Eutsler for their excellent report.

In accordance with report adopted by the House of Delegates of the Medical Society of Virginia, the membership of the Department of Clinical Education of the Medical Society of Virginia was next selected:

From the Medical Society of Virginia:

Dr. J. Allison Hodges, Richmond, President-elect, chairman;

Dr. Walter B. Martin, Norfolk;

Dr. C. B. Bowyer, Stonega.

From the Medical Colleges of the State:

Dr. Manfred Call, Richmond, Medical College of Virginia;

Dr. J. C. Flippin, University, University of Virginia, Department of Medicine.

From the State Department of Health:

Dr. Ennion G. Williams, Richmond, State Health Commissioner.

Acting executive sercetary:

Mr. George W. Eutsler, University, Extension Department of the University of Virginia.

It was decided that the term of office for these members should continue through the next annual meeting of the Medical Society of Virginia.

According to the adopted report, it was announced that members of the Committees on Medical Education and Hospitals, and of Scientific Work and Clinics now become the Advisory Board to this Department.

The chairman and acting executive secretary were requested to look over the situation and submit suggestions to the Department for consideration at its next meeting.

There being no further business, the meeting then adjourned.

Respectfully submitted,

AGNES V. EDWARDS,
Secretary pro tem.

Proceedings of Societies

The Rockbridge County Medical Society

Held its regular monthly meeting, Saturday, November 23rd, at the Jackson Memorial Hospital in Lexington, Va., Dr. E. P. Tompkins, president, presiding. Dr. Ennion G. Williams, state health commissioner, addressed the society on the necessity of a close spirit of cooperation between doctors and health units. Colonel C. R. Keiley, associate director of rural health work, and Dr. R. P. Cooke, local health officer also gave short talks with regard to this work.

The following officers were elected for the coming year: president, Dr. Robert Cooke, Lexington; vice-presidents, Dr. F. L. Thurman, Buena Vista; and Dr. C. H. Davidson, Lexington; and secretary-treasurer, Dr. H. L. Mitchell, Lexington (re-elected).

The Richmond Academy of Medicine,

At its meeting on December the 10th, elected Dr. William H. Higgins as president, to succeed Dr. W. B. Blanton whose term of office expired with 1929. The new vice-presidents are Drs. Karl S. Blackwell and Warren T. Vaughan, while Dr. Mark W. Peyser was re-elected secretary-treasurer for the thirty-seventh consecutive year. All officers are of Richmond. The board of trustees, which is not elective but is composed of the president and the four immediately preceding ex-presidents, includes Dr. C. C. Coleman, chairman, and Drs. Stuart Michaux, James H. Smith, Wyndham B. Blanton, and William H. Higgins.

The Rockingham County Medical Society

Held its regular meeting in Harrisonburg, Va., December the 2nd, at which time Dr. N. M. Canter was re-elected president and Dr. J. C. Harshbarger, secretary. Both officers are of Harrisonburg. At this meeting, Dr. B. C. Keister read a paper on "Some Things for the General Practitioner to Keep in Mind." This Society meets on the first Monday evening of each month and on these occasions, refreshments are served by the nurses of the Harrisonburg Hospital.

The Warwick County Medical Society,

At its meeting in Newport News, Va., on December the 9th, elected Dr. Samuel Downing, of Newport News, president for the year 1930, and Dr. Guy C. Amory, of Hilton Village, secretary-treasurer.

The Southside Virginia Medical Association

Held its last quarterly meeting for 1929 in Petersburg, on December the 10th, under the presidency of Dr. R. H. Manson, of McKenney. Following the reading of a number of interesting papers, officers were elected for the ensuing year. They are: President, Dr. J. A. Grizzard, Drewryville; vice-presidents, Dr. Ruth Mason, Petersburg; Dr. J. L. Rawls, Suffolk; Dr. W. W. Wilkinson, La Crosse; and Dr. Meade Edmunds, Petersburg; secretary-treasurer, Dr. R. L. Raiford (re-elected), Franklin. Following the afternoon session a delightful dinner was tendered the visiting doctors by the local profession.

The next meeting will be held in Hopewell on the second Tuesday in March.

The University of Virginia Medical Society.

At the meeting of the Society on November 25th moving pictures were presented showing "Movements of the Alimentary Tract in Experimental Animals" and "The Influence of Drugs on Gastro-Intestinal Motility."

On December 2nd there was a joint meeting of the Albemarle County Medical Society and the University of Virginia Medical Society. At this time moving pictures based on Kanavel's work on, "Infections of the Hand," were shown.

Following this, election of officers for the ensuing year was held. Dr. Edwin P. Lehman, Professor of Surgery, was elected president of the Society, and Dr. Joseph Graham, of the Department of Pathology, was elected secretary.

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The Truth About Medicine

In addition to the articles enumerated in our letter of October 25, the following have been accepted:

Curdolac Food Co.
- Curdolac Soya Flour.
- Curdolac Casein-Bran Improved Flour.
- Curdolac Soya-Bran Flour.
- Curdolac Breakfast Cereal.
- Curdolac Casein Compound.
- Curdolac Wheat-Soya Flour.
- Curdolac Soya-Cereal Johnny Cake Flour.
- Curdolac Soya-Bran Breakfast Food.

Cutter Laboratory.
- Ampoule Solution Silver Nitrate, 1 per cent.
- Typhoid Paratyphoid Prophylactic hospital size package.
- Polyanaerobic Antitoxin.

De Pree Chemical Co.
- Sulpharsphenamine—De Pree, 0.5 Gm. Ampules.
- Sulpharsphenamine—De Pree, 0.9 Gm. Ampules.

H. K. Mulford Co.
- Gelatine Compound Phenolized—Mulford.
- Diphtheria Toxoid—Mulford, 30 c.c. vial.
- Erysipelas Streptococcus Antitoxin, Concentrated, 10 c.c. syringe.
- Typho-Bacterin Mixed (Triple Vaccine TAB), thirty 1 c.c. vial package.
- Typho-Serobacterin—Mulford (Sensitized Typhoid Vaccine), 3 syringe package.
- Normal Horse Serum without Preservative.
- Alder Pollen Extract—Mulford; Alfalfa Pollen Extract—Mulford; Annual Sage Pollen Extract—Mulford; Apple Pollen Extract—Mulford; Aster Pollen Extract—Mulford; Blue Beech Pollen Extract—Mulford; Boneset Pollen Extract—Mulford; Brown Grass Pollen Extract—Mulford; Burning Bush Pollen Extract—Mulford; Burweed Marsh Elder Pollen Extract—Mulford; Buttercup Pollen Extract—Mulford; California Mugwort Pollen Extract—Mulford; Careless Weed Pollen Extract—Mulford; Cedar Tree Pollen Extract—Mulford; Clover Pollen Extract—Mulford; Crab Grass Pollen Extract—Mulford; Dahlia Pollen Extract—Mulford; Dragon Sage Pollen Extract—Mulford; Elm Tree Pollen Extract—Mulford; English Plantain Pollen Extract—Mulford; Fescue Pollen Extract—Mulford; Golden Glow Pollen Extract—Mulford; Hickory Tree Pollen Extract—Mulford; Milo Maize Pollen Extract—Mulford; Mock Orange Pollen Extract—Mulford; Oat Pollen Extract—Mulford; Olive Pollen Extract—Mulford; Pecan Tree Pollen Extract—Mulford; Pine Tree Pollen Extract—Mulford; Poverty Weed Pollen Extract—Mulford; Prairie Grass Pollen Extract—Mulford; Privet Pollen Extract—Mulford; Quack Grass Pollen Extract—Mulford; Rabbit Brush Pollen Extract—Mulford; Rose Pollen Extract—Mulford; Salt Bush Pollen Extract—Mulford; Shad Scale Pollen Extract—Mulford; Sheep Sorrel Pollen Extract—Mulford; Slender Ragweed Pollen Extract—Mulford; Spring Amaranth Pollen Extract—Mulford; Sudan Grass Pollen Extract—Mulford; Velvet Grass Pollen Extract—Mulford; Western Giant Ragweed Pollen Extract—Mulford; Wheat Pollen Extract—Mulford; Wild Oats Pollen Extract—Mulford; Willow Tree Pollen Extract—Mulford; Winter Grass Pollen Extract—Mulford; Yellow Foxtail Grass Pollen Extract—Mulford.

National Drug Co.
- Diphtheria Toxoid.

Thompson's Malted Milk Co., Inc.
- Thompson's Maltose and Dextrin.

NEW AND NON-OFFICIAL REMEDIES.

Digitos Ampules, 5 c.c.—Each ampule contains digitos (New and Non-official Remedies, 1929, p. 138), 5 c.c. H. K. Mulford Co., Philadelphia.

Luminal Capsules, 1½ grains. Each capsule contains luminal (New and Non-official Remedies, 1929, p, 81), 1½ grains. Winthrop Chemical Co., Inc., New York.

Metaphen 2,500—It contains 1 part metaphen (New and Non-official Remedies, 1929, p. 272), dissolved in 2,500 parts of water containing 0.33 per cent each of sodium bicarbonate and sodium carbonate. Abbott Laboratories, North Chicago.

Diphtheria Toxoid—Squibb.—This diphtheria toxoid (New and Non-official Remedies, 1929, p. 368), is also marketed in packages of one 30 c.c. vial. E. R. Squibb & Sons, New York. (Jour. A. M. A., November 9, 1929, p. 1471).

Diphtheria Toxoid — Cutter. — Diphtheria toxoid (New and Non-official Remedies, 1929, p. 368), prepared from diphtheria toxin whose L+ dose is 0.2 c.c. or less by treatment with 0.3 to 0.4 per cent formaldehyde. It is tested for antigenic potency by injection into guinea pigs. It is marketed in packages of one immunization treatment of three 1 c.c. vials; in packages of ten immunization treatments of thirty 1 c.c. vials; also in packages of one 30 c.c. ampule. Cutter Laboratory, Berkeley, Calif. (Jour. A. M. A., November 16, 1929, p. 1559).

Solution of Invert Sugar—Lilly.—A solution of a mixture of dextrose and levulose, obtained by the inversion of sucrose. Solution of invert sugar—Lilly is used in the injection treatment of varicose veins. It is claimed that the use of sugar solutions such as solutions of dextrose or of invert sugar have the advantage over solutions of sodium chloride, sodium salicylate or mercuric chloride, in that they do not cause severe cramps or sloughing if accidentally injected outside the veins. Solution of invert sugar—Lilly is marketed in ampules containing 5 Gm., 6 Gm., and 7 5 Gm., respectively, in 10 c.c. Eli Lilly & Co., Indianapolis.

Sulpharsphenamine—De Pree, 0.5 Gm. Ampules.—Each ampule contains sulpharsphenamine—De Pree (New and Non-official Remedies, 1929, p. 71), 0.5 Gm. De Pree Chemical Co., Holland, Mich.

Sulpharsphenamine—De Pree, 0.9 Gm. Ampules.—Each ampule contains sulpharsphenamine—De Pree (New and Non-official Remedies, 1929, p. 71), 0.9 Gm. De Pree Chemical Co., Holland, Mich. (Jour. A. M. A., November 23, 1929, p. 1649).

PROPAGANDA FOR REFORM

Viosterol: Irradiated Ergosterol.—The demonstration that many food materials can acquire unique physiologic potencies when the products are subjected to the direct influence of ultraviolet rays is a contribution of recent scientific investigation. The effects of the irradiated substances within the body are identical with, or equivalent to, those that have been ascribed to vitamin D. the antirachitic food factor. The latter is known to induce the healing of rickets or to prevent the latter when suitable foods containing vitamin D. such as cod liver oil. are employed in a prophylactic way. Tetany and probably other diseases may be favorably influenced in a comparable manner. Ergosterol, a sterol widely present in small amounts in edible products, was shown to the "provitamin" or substance that acquired antirachitic potency after suitable irradiation. It was inevitable that a product possessing the remarkable action of irradiated ergosterol and readily obtainable should attract attention in the fields of

therapy and prophylaxis; also, the danger of quackery follows in the wake of discovery, particularly when, as in the case of irradiated ergosterol, the product possesses enormous potency. To avert the almost inevitable confusion and to exercise a wholesome restraint over the exploitation of the new product, the Council on Pharmacy and Chemistry of the American Medical Association has followed its usual custom of adopting a common name, viosterol, for irradiated ergosterol. It has recognized two preparations of this substance, namely, viosterol in oil 100 D. (N. N. R.), having one hundred times the antirachitic potency of a standard cod liver oil, and cod liver oil with viosterol 5 D. (N. N. R.), being cod liver oil with the addition of viosterol and having five times the anitrachitic potency of a standard cod liver oil. In announcing this action, the Council publishes standards of identity, dosage, and suggestions for therapeutic use. The use of products accepted for New and Non-official Remedies, according to the advices of the Council, is likely to avert any undesirable consequences from the use of this potent agent. (Jour. A. M. A., August, 31, 1929, p. 694).

Accidents with Local Anesthetics.—The investigation of accidents following the use of local anesthetics instituted by the Therapeutic Research Committee of the Council on Pharmacy and Chemistry of the American Medical Association has had many practical results. The reports were published in 1920 and 1924; now, Andre Klotz, of the Strasbourg Hospital, has published the results of an extensive study of the literature on this subject. He agrees with the American committees that accidents are due mainly to overdosage, to injections of cocaine, to the use of solutions of too high concentration, to excessive doses of epinephrine, and a smaller number to peculiar conditions of the patient that are beyond evaluation by the physician. The investigations of the American committees and of Klotz have thrown much light on the causes of avoidable accidents with local anesthetics, but it is obvious that many surgeons continue to disregard the warnings that have been published. The report of Klotz emphasizes the importance that physicians should continue to cooperate with the Permanent Committee for the Study of Toxic Effects of Local Anesthetics of the Therapeutic Research Committee. (Jour. A. M. A., May 18, 1929, p. 1680.)

Prescription of Remedies in Accordance with Ethics.—The Principles of Medical Ethics of the American Medical Association contains the following with regard to the prescribing of medicine: ". . . it is . . . unethical to prescribe or dispense secret medicines or other secret remedial agents, or manufacture or promote their use in any way." It contains no provision holding it unethical to prescribe proprietary medicinal preparations of declared known compositon. If physicians will limit their prescribing to the medicinal products included in the United States Pharmacopeia, the National Formulary, and New and Nonofficial Remedies, they may be confident that they are not prescribing secret remedies; they should be mindful, however, that the National Formulary contains many drugs and drug mixtures that are practically worthless, and that preparations in New and Nonofficial Remedies are new, and, though worthy of trial, are in some instances still more or less in the experimental stage. For a guide to prescribing, the Epitome of the U. S. Pharmacopeia and National Formulary, and New and Nonofficial Remedies are to be recommended. (Jour. A. M. A., May 18, 1929, p. 1697.)

Book Announcements

Research and Medical Progress and Other Addresses. By J. SHELTON HORSLEY, M. D., Attending Surgeon, St. Elizabeth's Hospital, Richmond, Va. St. Louis. The C. V. Mosby Company. 1929. Octavo of 207 pages. Cloth. Price, $2.00.

This book is a collection of addresses and papers by Dr. J. Shelton Horsley. Most of them have been presidential addresses or chairman's addresses, or orations before state medical societies, and have been delivered before mixed audiences of the medical profession and the laity. One of the addresses is the presidential address before the Virginia Academy of Science.

The addresses have to do largely with factors that make for medical progress and improvement in medicine, and do not deal with technical details of surgical procedures. Much stress is laid upon biologic principles in medical practice.

This book is dedicated to the Ex-Interns of St. Elizabeth's Hospital, Richmond, Va.

Hemorrhoids. The Injection Treatment and Pruritus Ani. By LAWRENCE GOLDBACHER, M. D., Philadelphia. F. A. Davis Company. 1930. Octavo of 205 pages. Illustrated with 31 half-tone and line engravings, some in colors. Cloth. Price, $3.50 net.

Clinical Obstetrics. By PAUL T. HARPER, Ph. B., M. D., Sc. D., F. A. C. S. Fellow of the American Association of Obstetricians, Gynecologists, and Abdominal Surgeons, and of the New York Obstetrical Society. Clinical Professor of Obstetrics, Albany Medical College. Regional Consultant in Obstetrics, New York State Department of Health. Philadelphia. F. A. Davis Company. 1930. Octavo of 629-xix pages. Illustrated with 84 plates of engravings (250 figures) with legends and charts. Cloth. Price $8.00 net.

The Medical Museum. Modern Developments, Organization and Technical Methods Based on a New System of Visual Teaching. By S. H. DAUKES, O. B. E., M. D., D. P. H., D. T. M. & H. Director of The Wellcome Museum of Medical Science affiliated to The Bureau of Scientific Research. An amplification of a thesis read for the degree of M. D. Cambridge. The Wellcome Foundation, Ltd. Endsleigh Court, 33, Gordon Street, London, W. C. 1, England. Octavo of 183 pages. Illustrated. Cloth.

Handbook of Bacteriology for Nurses. By HARRY W. CAREY, A. B., M. D. Assistant Bacteriologist, Bender Hygienic Laboratory, Albany, N. Y. (1901-1903); Pathologist to the Samaritan Hospital, Troy, N. Y., etc. Third Revised and Enlarged Edition. Philadelphia. F. A. Davis Company. 1930. Octavo of 282 pages. Illustrated with forty-three engravings and one colored plate. Cloth. Price, $2.25 net.

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Editorial

Fever Therapy.

Internal medicine awaits the results of investigation of the value of the production of fever for therapeutic purposes. Suggestive and promising results have been attained but a cautious and conservative state of mind should be maintained as the evidence comes in for and against this procedure. Like every new procedure that is attended by unexpected success, enthusiastic champions are quickly prone to claim unwarranted virtues and powers for the new found process, and, by the same token, are tempted to assign to the new found agent greater power than subsequent events verify. These generalizations on scientific cautions, however, are not to be taken as mental antagonisms, but on the contrary, a willingness to engage in a studious reception of the rather new procedure.

It should be recalled, however, in referring to "fever therapy" as a new procedure that, while it has been recently demonstrated in relation to thrombo-angiitis obliterans, the therapeutic use of non-protein injections, both intravenously and intra-muscularly for its reaction upon the sick body, has been used for a number of years, reaching back to the early days of typhoid vaccine and gonorrheal vaccine administration. It is recalled by practitioners: the advantage in chronic inflammations of joints sometimes derived from the intravenous injections of killed bacteria of typhoid in limited and counted numbers and administered through a period of time. For instance, the use of non-specific proteins was found to be useful, more or less, in various forms of subacute and chronic, if not in some acute cases of arthritis, as shown by the well-known observations of Miller in some eighty cases reported years ago. The initial dose employed was some forty million typhoid bacilli, intravenously, and this dose was spaced to suit the fever production and was increased to some one hundred and fifty million for this purpose. Likewise, in gonorrheal infections characterized by arthritis and epididymitis, the intravenous use of non-specific protein injections were employed with more or less success. It was in this type of subacute or chronic infection that milk-injections intramuscularly, as well as typhoid vaccine, were used with salutary effect. The chill and fever following these injections appeared to bring about a definite change of convalescence in joints and tissues that seemed to be about to resolve into permanent pathologic alterations. Iritis, likewise, particularly, was treated with intramuscular injection of milk. Not only so, but such stubborn conditions as chronic skin infections have been attached by foreign protein therapy, with more or less success. The underlying factors involved in the defenses of the body in such persistent infections in joints, in the iris and on the skin are not understood, but the facts remain that astonishing and often spectacular "cures" have been accomplished in spite of the unsettled state of the knowledge of the mechanism at work.

NEWER INVESTIGATIONS

Production of fever for therapeutic purposes is now being studied with renewed interest at the Mayo Clinic. Here it has been brought to the front in the striking results obtained in the treatment of occlusive forms of vascular diseases of the extremities. Heretofore, gangrene of the feet as depicted and described by Buerger has been largely surgical in its treatment. Amputation of the toes and sometimes of the leg were often necessary to arrest the acute occlusive processes. One should realize that the incidence of thrombo-angiitis obliterans (or Buerger's Disease) is far greater than heretofore estimated. Vasomotor disturbances of the vessels of the extremities that may antedate the complete occlusion of the lumen of the vessels often bring changes in color of the feet as well as painful attacks of the extremities. In such conditions and also in actual arteriosclerotic changes in the vessels of the extremities that have pre-

vented adequate circulation to the parts, "fever therapy" seems to offer a new hope. Such patients are often the despair of practitioners. Such patients are naturally often found among the working classes, whether in the city or country; although the Jewish race is said to often exhibit signs of Beuger's disease. Blood poison of the extremities, gangrene of the toes or foot, atrophic ulcers of the feet, make a group of maladies that involve, after all is said, the vascular supply to the affected parts and it is to improve this important feature of the diseased area that fever therapy is directed and practiced.

Allen and Smithwick have emphasized a method in these diseases and, at this time, it is believed to be the best method of attack upon these conditions. It is thought that the beneficial reaction comes about as a result of the vaso-dilating response on the part of the surface arterioles and this is shown by a "sharp increase in surface temperature" which is of greater magnitude than increase in the temperature of the blood, and by the definite analgesic effect on the pain which is felt in trophic ulcers and in gangrene of the feet. The relief of pain in fever production therapy has been most salutary. Morey and Brown* of the Mayo Clinic have recently remarked upon the pitiable condition of these patients suffering terribly from various stages of thrombo-angiitis obliterans. Many of the patients in former days were subjected to amputations but during the past five years, the medical procedure has sharply reduced the number of amputations. These clinical workers have more recently endeavored to work out a method of eliminating untoward effects of "fever therapy" in these patients. When one knows that their conclusions as to methods are based upon more than twenty thousand injections, physicians and surgeons alike, having to deal with a far less number of such patients, may well accredit their observations as the "best opinion" of the day.

The chief untoward effect that was studied with the purpose of reducing it was the chill and the chief aim of the treatment was to prolong the fever. Violent reactions, in other words, were avoided, if possible. It was found that triple typhoid vaccines, intravenously given, failed to produce adequate fever response and, at the same time, gave an abnormal amount of shock and, it was thought that the nitrogen content of these vaccines was the cause of this untoward effect. Certain typhoid vaccines were studied by these workers with the purpose of finding antigens that were fever-producing in thrombo-angiitis obliterans. Again, effort was made to develop, for these cases, a vaccine which could be used intramuscularly producing a fever without a chill. A water-in-oil isotonic emulsion, by aid of Lilly laboratories, containing a large amount of a potent paratyphoid-B Vaccine, was produced and tried. The strength of this vaccine preparation was made so that each cubic centimeter contains 7,500,000,000 killed organisms. Satisfactory reactions were gotten with this preparation. High fever was not produced by it (frequently not higher than 99° F.) but there was marked relief of pain in the extremities and the patients were conscious of increased heat over the diseased parts. There were no chills. They state that one hundred per cent of relief from pain of gangrene was obtained in several cases after the second or third injection.

Practitioners may find in this work a promising field of therapy in patients with vascular disease of the extremities. Even in arteriosclerotic changes in old patients who show signs of vascular occlusion or of gangrene, this late form of intramuscular administration of this emulsion preparation of paratyphoid-B Vaccine may offer considerable hope of benefit. "Fever therapy," as illustrated in these types of vascular disease, with the distinctly favorable results obtained by Morey and Brown, at the Mayo Clinic, would seem to hold out possibilities in those cases which, heretofore, over the past decade, have received other non-specific protein treatment.

Nervous Indigestion.

As progress is made in medical and surgical prevention of the more malignant or grosser forms of medical and surgical pathology, with their evident array of more or less obvious symptoms, there is a realization, on the part of the practitioner, that "the neurotic," the neurasthenic, or hypochondriac patient suffers somewhere or somehow with physical conditions worthy of scrutinizing search. It is reasonable to look to the day when prac-

*Proceedings of Staff Meetings of the Mayo Clinic—November 27, 1929. Morey and Brown. Page 343.

titioners will give a closer inquiry to complaints or symptoms arising in the body in which gross pathology of obvious degree is not to be found. In the realm, then, of symptoms arising from misfunction rather than from pathologic changes, there is a big proportion of patients who are seeking relief from practitioners the country over. Probably much of addiction to quackery, narcotic drugs, and the like, is due to the fact that the medical profession has failed, as yet, to evaluate these matters in their true relation. With these generalizations, one may turn for a moment to the so-called "nervous indigestion" group of patients for illustration. The crabbed, despondent, cynical, irascible, irritable, pugnacious, impatient patient with "nervous indigestion" is a real problem for the practitioners. The treatment of such patients demands an "executive session," in which a most complete examination of the general body must be carried out. Superficial and trivial examination is not only of little worth but begets failure. Alvarez* has covered this problem in a paper that practitioners may profitably read and follow.

The plan of treatment of these cases involves psychotherapy and instruction in mental and physical hygiene, physiotherapy, exercise and massage, diet and drugs.

Before treatment begins, accurate and complete diagnosis must be made to be sure that organic disease does not lie in some remote part as a cause of the "neurotic symptoms." Utmost care must be exercised in studying the daily routine of the life of the patient, in periods of decades and not in days just preceding the time of consultation.

Emptying of Stomach Contents.

Beaumont, Pavlov and Cannon, distinguished physiologists, have worked over this problem. Each has added his part in the effort of arriving at the solution, if solution there can be to such a varied and changing problem in digestion. Hawk, Rehfuss and Bergein have also contributed notable studies. During the past decade, we know the motility of the stomach, or motor function of the stomach, has taken a more prominent place in investigation of gastric function. Formerly, the secretory function, or the chemical action of the ferments and secretions of the stomach on the food contents, occupied the foremost position. It has been apparent, however, that the time element involved in the retention of food in the stomach plays a big part in problems of the conversion of gross food as received into the alimentary tract and food elements ultimately found in the blood and lymph. Not only so, but more immediate is the matter of evacuation of food from the stomach in disordered stomachs, in a diseased body, and after surgical operations. One must appreciate the extreme importance of the stomach in all medical and surgical problems. One must understand what the stomach can and cannot do; when it helps and when it hinders in these conditions daily before practitioners. So our readers may note with interest the preliminary report of Wilson, Dickson and Singleton (*Archives of Internal Medicine*, December, 1929, page 787) on the note of evacuation of various foods from the normal stomach.

*J. A. M. A. 1927. LXXXIX, pages 440-445.

Acid Control

Pavlov and Cannon have explained differences in rate of evacuation by the hypotheses of acid control of the pylorus. These authors give a brief resume of the question of acid control of physiologists, and they bring out the recent view that acid control is not the only factor, or even the principal influence in determining the rate of emptying of the stomach, and they emphasize the importance of studying other factors involved.

Physical and Other Factors

Gruel leaves the stomach more rapidly than dry carbohydrates; minced meat leaves the stomach faster than large lumps of meat. Physical exercise and posture influence it; carbon dioxide content of the blood is a factor: the rate of the utilization of glycogen affects it. The emotions change the emptying of the stomach. Colonic irritation influences it. Smoking and drinking water with meals delay or increase emptying of the stomach contents. Certain drugs, such as strychnine, atropine, caffeine, and alcohol, affect emptying time of the stomach. Finally, other factors are at work in this important act in the digestion of food. The probability that peristalsis of the stomach and the emptying of its contents is influenced materially by increased fat in the blood after a fat meal, is one of interest to these investigators. They reach the general conclusion from experiments, that the

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emptying of the stomach depends on two factors: peristalsis of adequate depth and consistency of the meal. They note that all liquid meals start to leave the normal stomach as soon as ingested, this regardless of composition, and that most solids commence to leave as soon as they reach the pyloric sphincter. They observe that after the first few minutes, proteins are evacuated more slowly than carbohydrates, and fats emptied most slowly. In closing, they say that in case of the fats, the delay is due possibly to depression of muscular activity by products of fat digestion circulating in the blood.

Such studies, the preliminary reports of which are above noted, help the practitioner in his daily work of treating problems of digestion and in advising the patient in regard to the manner, method, and nature of routine feeding.

News Notes

Writings of Virginians Desired by the Virginia Bureau of Mental Hygiene.

An observant visitor to the headquarters of the Virginia Bureau of Mental Hygiene, a recently created division of the Department of Public Welfare, in the Virginia Hospital Building on Clay Street, Richmond, is impressed with the evidence of a good beginning of a select collection of interesting and valuable books and monographs on Mental Hygiene and kindred subjects. There are writings on psychiatry, neurology, epilepsy, feeblemindedness, psychology, psychiatric social service, criminology, delinquency, behavior problems, prevention of mental disorders and delinquency. There are also current medical journals, bibliographies and reports of institutions which add materially to the value of the little library.

The Bureau desires especially to have in its collection books and reprints of articles on the foregoing subjects, published by Virginia authors. It would like to make the Bureau a place for the collection of such writings by Virginia physicians. The Bureau desires not merely recent material but past publications by Virginia physicians relative to these several subjects. There are, doubtless, scattered in libraries of physicians throughout the State many pamphlets and interesting books on these subjects written by Virginians that would be of very special interest. Any physician in the state would be doing good service to communicate with Dr. W. F. Drewry, Director of the Bureau of Mental Hygiene, relative to this special literature which he desires.

The Virginia Tuberculosis Association

Is to hold its annual meeting in Roanoke, on February the 28th. On this occasion, Dr. Kennon Dunham, of Cincinnati, will be the chief speaker. Dr. Dunham, who is well known to the medical profession for his outstanding work in tuberculosis, is a forceful and interesting speaker and frequently appears on the programs of the National Tuberculosis Association. He has chosen as his subject: "Chronic Non-Tuberculous Lung Lesions."

The business session of the Virginia Tuberculosis Association will be held on the morning of February 28th, Dr. Dean B. Cole, president, presiding, and in the afternoon there will be a round table on the subject of tuberculosis programs. Among the speakers at the afternoon session will be Dr. P. P. Jacobs, of New York.

The evening meeting will be a joint session with the Roanoke Academy of Medicine. In addition to Dr. Dunham's address the Academy will also have a speaker, whose name and topic will be announced later.

All physicians and others interested in the tuberculosis problem are invited to attend any and all of these sessions of the Virginia Tuberculosis Association.

Substandard Ether is Seized by Government.

The largest shipment of ether for anesthesia ever detained by the Federal Government was seized at Bayway, N. J., recently after laboratory tests had shown that samples from a lot consisting of 108,300 quarter-pound tins were below the standards required under the Federal Food and Drugs Act. This ether did not meet the requirements of the U. S. Pharmacopoeia, which is the standard designated by the Food and Drugs Act for drugs in interstate commerce or imported from abroad.

The seized ether is part of a lot made during the World War for the Government. It was in storage until 1926, by which time it had deteriorated to such degree as to be unfit for use as an anesthetic. The War Department then sold it at a low price under bond that it was not be used or resold for use as an anes-

thetic but only for technical purposes, such as in laboratories, for dry cleaning, or for fuel in starting motors. Contrary to the terms of the bond, some of this ether, labeled as anesthetic ether, was consigned to hospitals in small lots. These small lots were seized at once. Now this large shipment has been removed from the channels of trade by action under the Food and Drugs Act.

Dr. R. Finley Gayle,

After a partnership for a number of years with Dr. Beverley R. Tucker, Richmond, Va., has taken up independent work and opened offices in Suite 406 Medical Arts Building, this city, on January the 1st. Dr. Gayle will continue to limit his work to neurology and psychiatry.

Married.

Dr. William LeRoy Dunn and Dr. Thelma Flournoy Brumfield, both of the class of '26, University of Virginia, Department of Medicine, in Farmville, Va., December 26th. Mrs. Dunn, who is a daughter of Dr. and Mrs. W. A. Brumfield, will continue her work in connection with the Pathological Department of the University of Virginia, for the rest of this session. Dr. W. L. Dunn, who since graduation has been serving as an intern at St. Luke's Hospital and at Bellevue Hospital, both in New York City, expects to be with the Tuberculosis Department of the State Board of Health for the next six months.

Dr. Frank Ellsworth Tappan, of the class of '28, University of Virginia, Department of Medicine, and Miss Alice B. Ward, Berryville, Va., December 6th. Since graduation, Dr. Tappan has been an interne at Garfield Hospital, Washington, D. C., but is now locating in Berryville.

Dr. Eugene Marvin McDaniel, of the class of '29, Medical College of Virginia, and Miss Edna May Owen, Richmond, December 26th. Dr. McDaniel is now practicing in Martinsville, Va.

Malaria Congress to be Held.

The second International Malaria Congress is to be held in Algiers, on May 19, 20, and 21, 1930. Information about this Congress may be obtained by addressing the Secretary General of the Congress, at Institut Pasteur, Algiers.

Dr. Churchill Robertson,

Recently connected with Mount Regis Sanatorium, Salem, Va., is taking special work in diseases of the heart at the Philadelphia General Hospital. Following his work there, he will spend sometime in New York before returning to Virginia.

The American Public Health Association

Will hold its 59th annual meeting in Fort Worth, Texas, during the week of October 27, 1930, with the Hotel Texas as headquarters.

Health officers, nurses, dietitians, sanitary engineers, child and industrial hygienists—all of the specialists that make up the public health profession—meet on this occasion to consider their common problems. Each of the ten Sections of the Association—Health Officers, Laboratory, Vital Statistics, Public Health Engineering, Public Health Nursing, Public Health Education, Food, Drugs and Nutrition, Industrial Hygiene, Child Hygiene and Epidemiology—arrange an individual program and there are a number of General Sessions to which the public is invited. Information about this meeting may be obtained from the Executive Secretary, Mr. Homer N. Calver, 370 Seventh Avenue, New York, N. Y.

International Congress for Prevention of Blindness.

Representatives from 23 nations, including the United States and Argentina from the Western Hemisphere, recently held an International Congress on the Blind at Vienna to draw up agenda, elect officers, and appoint committees for a future international conference to deal with questions relating to the prevention of blindness and the education, employment, and general welfare of the blind in all parts of the civilized world. An executive committee was empowered to decide the date and place for the conference and to approach the League of Nations for permission to hold it under the League's auspices.

Dr. Southgate Leigh Honored.

The Cosmopolitan Club presented the Gold Medal for most Distinguished Citizenship to Dr. Southgate Leigh, of Norfolk, at a banquet held at the Norfolk Country Club on Tuesday evening, January the 7th. A number of members of the Norfolk County Medical Society and their wives attended this banquet.

Dr. Wood Chairman of Committee on Scientific Work and Clinics.

Dr. Chas. R. Grandy, president of the Medical Society of Virginia, has appointed Dr. J. Edwin Wood, University, chairman of the Committee on Scientific Work and Clinics of

the Society, to fill the vacancy caused by the resignation of Dr. J. S. Horsley, Jr. Dr. Horsley was unable, on account of pressure of other work, to accept the chairmanship for another year, though he remains a member of the committee.

Dr. Garnett Nelson,

Of McGuire Clinic, Richmond, Va., who has been critically ill at St. Luke's Hospital, this city, was reported as being better when we went to press.

Public Playgrounds for Turkey.

A playground has been established at Angora, the capital of Turkey, and the Turkish National Child Welfare Association hopes to be able to make it a training center for recreation workers. In connection with the playground the first swimming pool in Turkey is being constructed.

Dr. A. S. Richardson,

O'Keeffe, W. Va., who was recently quite ill at Lewis Gale Hospital, Roanoke, Va., suffering from a palmar infection, is home again and has resumed his professional work.

Dr. Tom A. Williams,

Formerly of Washington, D. C., has returned to Florida after a year in Europe and is limiting his work to neurological consultations. He is located in Monterey Apartments, 1611 Michigan Avenue, Miami Beach.

Dr. K. D. Graves

Has returned to Roanoke, Va., after practicing for several years in Pearisburg, Va. He recently spent several months studying in Baltimore and New York and is now limiting his work to internal medicine and clinical pathology.

Dr. Julian M. Robinson,

Danville, Va., was appointed on the staff of John Ashley Jones, commander-in-chief of the Sons of Confederate Veterans, at the recent meeting in Charlotte, N. C.

Mr. Aubrey H. Straus

Has returned to his laboratory at 613 West Grace Street, Richmond, Va., after visiting and looking into new methods at several laboratories in New York and Washington, D. C.

Dr. W. Hampton Venable,

Who was made Superintendent and medical director of Piedmont Sanatorium at Burkeville, Va., in the Spring, was in charge of the Tuberculosis Sanatorium in Kuling, China, from 1919 to 1927. Upon returning to the States, he was an assistant physician at Catawba Sanatorium, Va., until appointed to his present work.

Dr. R. M. DeHart,

Of the class of '29, Medical College of Virginia, has located at Floyd, Va., where he is engaged in general practice. Dr. DeHart had twelve months' undergraduate internship at the City Home in Richmond, and spent four months at St. Luke's Hospital, this city, before locating in Floyd.

Seattle's Ambition.

Last year the city of Seattle attained the lowest infant mortality rate of the fifty-four cities in the country with 100,000 or more population according to the census of 1920, its rate being forty-three infant deaths per 1,000 live births in contrast with a provisional rate of sixty-eight for the birth-registration area of the country. But this record does not satisfy Seattle; it wants to lower that record to an irreducible minimum and for that purpose has analyzed its infant-death certificates to discover the important controllable causes. In 1928 three such causes—premature birth, injuries at birth, and pneumonia—were responsible for considerably over half of the infant deaths, and Seattle intends to fight these causes to the best of its ability. The city's present excellent record is due largely to the small number of deaths from nutritional disturbances and acute gastrointestinal diseases and from infectious diseases of childhood.

Officers in Kiwanis Club.

Dr. Z. V. Sherrill, Marion, Va., was recently elected to the presidency of the Kiwanis Club of that place, and Dr. E. A. Holmes, also of Marion, was elected as one of the directors.

The Church Hill Medical Society,

Richmond, Va., held its December meeting in the home of Dr. A. Seldes, at which time, Dr. John B. Bullard, by invitation, read a paper on "Allergy." Refreshments were served following the meeting. Officers elected for the ensuing year are: President, Dr. W. H. Whitmore; vice-president, Dr. M. L. Boyle; secretary-treasurer, Dr. R. S. Faris; librarian, Dr. A. Seldes; and reporter, Dr. J. D. Boisseau. All are of this city.

The Seaboard Medical Association of Virginia and North Carolina

Held its annual meeting in Newport News, Va., December 3rd, 4th and 5th, under the presidency of Dr. Robert A. Davis of that city. The meeting was well attended, and the

program was excellent. Honorary fellowship was conferred upon Dr. James Carroll Flippin, dean of the Department of Medicine of the University of Virginia, who attended and presented a paper on "Pneumonia." Elizabeth City, N. C., was selected as the next place of meeting, and the dates were set as December 2, 3 and 4, 1930. Following is a list of officers elected for the ensuing year: President, Dr. H. D. Walker, Elizabeth City, N. C.; vice-presidents, Dr. James H. Culpepper, Norfolk; Dr. W. Bernard Kinlaw, Rocky Mount, N. C.; Dr. J. E. Marable, Newport News; and Dr. DeWitt Klutz, Washingtin, N. C. The treasurer, Dr. A. M. Burfoot, Fentress, Va., and secretary, Dr. Clarence Porter Jones, Newport News, were re-elected.

Dr. and Mrs. George J. Tompkins,

Lynchburg, Va., celebrated their Silver Wedding anniversary, with a lovely reception at their home in that city, on December the 28th.

Sanitation Education Campaign.

King William County now leads in the Sanitation Education Campaign which was inaugurated by the Virginia State Department of Health in June, 1928. In this county, 80.7 per cent of homes scored. This campaign is mainly educational in character. The individual housekeeper surveys her own home and determines just what conditions are right or wrong, then scores the home on blanks provided by the State Department of Health. The Department has offered a first prize of $500, a second prize of $300, and a third prize of $200 to the counties in the State that show the highest percentage of sanitation of homes by June, 1931.

Dr. Gladys Smithwick,

Of the class of '25, Medical College of Virginia, and recently at Wallum Lake, Rhode Island, sailed December 21st, from Vancouver, B. C., by *S. S. Empress of Russia*, for China. She has been sent out by the Southern Presbyterian Board of Foreign Missions to Suchowfu, Kiangsu, China, where she will be engaged in medical misisonary work.

Scientifice Exhibits Being Arranged for A. M. A. Meeting.

Dr. Paul N. Leech, Director of the Scientific Exhibits for the American Medical Association, has issued forms for application for space for scientific exhibits at the Detroit meeting. Those interested, who have not secured forms, should send for them at once, as applications for space must be received by the Director before March 20, 1930.

Dr. Margaret P. Kuyk,

Of Richmond, Va., sailed January the 8th on the motor driven vessel, *Saturnia*, of the Cosulich Line, for travel and study in the countries bordering the Mediterranean. She expects to return home in the late Spring.

To Be With Southern Orthopedic Hospital.

Miss Isabel Simpson, for more than two years superintendent of Petersburg Hospital, Petersburg, Va., recently tendered her resignation to accept a similar position with the Southern Orthopedic Hospital, which was opened in Richmond, the first of this month.

Southern Surgical Association.

At the meeting of this Association held in Atlanta, Ga., early in December, under the presidency of Dr. Lucius E. Burch, of Nashville, Tenn., Dr. James M. Mason, Birmingham, Ala., was elected president for the succeeding year, and Lexington, Ky., was selected as the next place of meeting. Dr. Urban Maes, New Orleans, and Dr. Alexius McGlannan, Baltimore, were elected vice-presidents; Dr. Julius H. Taylor, Columbia, S. C., treasurer, and Dr. Robert L. Payne, Norfolk, Va., was re-elected secretary.

The Congress on Medical Education, Licensure and Hospitals

Will be held at the Palmer House, Chicago, February 17th, 18th and 19th. An interesting program has been arranged, including a number of symposiums on live topics in present day medicine.

Dr. T. Latane Driscoll,

Richmond, Va., announces that, due to lack of office space, he has moved his offices to 209 Grace Arcade Building, corner Third and Grace Streets, this city.

The First International Mental Hygiene Congress

Is to be held in Washington, D. C., May 5-10, 1930. Delegates are expected from more than thirty countries. Many subjects are listed on the program with practically all aspects of mental hygiene to be covered.

The American Psychiatric Association and the American Association for the Study of the Feebleminded will hold their annual meetings in Washington at the same time and

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place as the Congress and will be active participants in its sessions.

Papers will be read at the morning sessions and discussions will follow. Afternoons will be given over to meetings of committees, prepared discussions not on the regular program, and recreation and sightseeing. General sessions, designed to appeal widely to laymen, will be held on several evenings.

Dr. William A. White, Washington, D. C., is president of the Congress, and Mr. Clifford W. Beers is Secretary General.

Dr. Paul C. Colonna,

A native of Virginia and formerly an interne at St. Elizabeth's Hospital, Richmond, Va., was recently appointed clinical professor of Orthopedic Surgery in the University and Bellevue Hospital Medical School, which is the medical department of New York University.

The Tri-State Medical Association of the Carolinas and Virginia

Will hold its thirty-second annual meeting at Charleston, S. C., February 18-19, 1930, under the presidency of Dr. Cyrus Thompson, of Jacksonville, N. C. Dr. J. M. Northington, Charlotte, N. C., is secretary-treasurer. As usual, this gives promise of being a most interesting and pleasant meeting.

Awards of Radiological Society.

At its meeting in Toronto, Canada, early in December, the Radiological Society of North America awarded its annual gold medals to Dr. Joseph C. Bloodgood, of Baltimore, Md., for his study in bone malignancy, its diagnosis and treatment by the Roentgen ray and radium, and to Dr. Russell L. Haden, of Kansas City, Mo., for a Roentgen ray study of dental infection.

Dr. Bloodgood is clinical professor of surgery at Johns Hopkins University School of Medicine, and Dr. Haden is professor of experimental medicine at the University of Kansas, School of Medicine.

The Southern Section of the American Laryngological, Rhinological and Otological Society

Will hold its annual meeting in Roanoke, Va., Saturday, January 18th, at the Hotel Patrick Henry. Besides interesting papers by members, the society will be addressed by the President of the National Association, Dr. Ross Hall Skillern, of Philadelphia.

Dr. Elbyrne G. Gill, Roanoke, Va., is chairman of the Southern Section and will entertain the members and guests at luncheon.

Dr. L. L. Williams,

Who has been in India since August 1st, where he has been taking part in a malaria survey on behalf of the health work of the League of Nations, has sailed for this country. He will again work in connection with the health department of Virginia. Before going to India, Dr. Williams supervised the study and control of malaria, in connection with our State Department of Health.

Raiford Hospital to be Enlarged.

Dr. R. L. Raiford, Franklin, Va., has recently purchased the Merchants and Farmers Bank Building in which building he has for the past year been operating a small hospital. The purchase of this building will enable him to enlarge the hospital and make many other immediately contemplated and future improvements. Dr. Philip Jacobson, of Petersburg, will assist Dr. Raiford in the surgical work.

Dr. Raymond D. Kimbrough,

For the past two years instructor in dermatology and syphilology at the University of Virginia, has located in Norfolk, Va., with offices at 201 West Freemason Street. His work will be limited to the above named branches. Dr. Kimbrough has just returned from New York where he has taken a special course in the department of dermatology and syphilology of the New York Post-Graduate Medical School and Hospital.

Health Conditions Throughout the World.

Surgeon General H. S. Cumming, of the Public Health Service, has recently submitted to Congress a report which summarizes in an interesting way the health conditions throughout the world during the past fiscal year. This report indicates that one of the important public health duties of the Federal Government is the prevention of the introduction and spread of infectious diseases in the United States from foreign countries.

A constant interchange of sanitary information with other nations of the world was in effect through the International Office of Public Hygiene of Paris, the Pan-American Sanitary Bureau, and the Health Section of the League of Nations. Important epidemiological information was also received by the Public Health Service through American consuls,

officers of the Service stationed abroad and directly from foreign Governments.

Dr. Judson T. Vaughan

Has located in Ashland, Va., for the practice of medicine. Dr. Vaughan is a graduate of the Medical College of Virginia in the class of '27 and, for the past year and a half, has been connected with the Tuberculosis Service of the Virginia State Board of Health.

Dr. J. M. Bishop,

Who practiced for a time at Appalachia, Va., is now taking special work in pediatrics at the Children's Hospital, of Philadelphia.

Special School for Handicapped Children, Des Moines.

A specially designed and equipped school for handicapped children is to be erected in Des Moines. Two stories high and constructed with ramps, it will have facilities for sunbaths, sight-saving classroom, workshop, gymnasium, playroom, and other special equipment. One important object will be to find out the vocational possibilities of each child and train him for a useful life in the community. There are said to be 285 children in the city who are eligible to attend the school because of crippling conditions and other physical handicaps. *The Journal of the A. M. A.* states that it has been made possible through the generosity of two former residents of Des Moines, who have given $250,000 for the purpose.

Dr. and Mrs. John L. Thornton

And young son, of Warrenton, Va., are spending sometime in Tucson, Ariz., Dr. Thornton having gone there for his health.

Dr. D. Lane Elder,

Hopewell, Va., has been elected president of the Kiwanis Club of that city for the present calendar year.

Dr. Stoner Now With Roche.

Dr. W. H. Stoner, who was formerly Director of the Medical Division Professional Service Department of E. R. Squibb & Sons, has joined the Scientific Department of Hoffmann-La Roche, Inc., of Nutley, N. J., where he assumes the duties of Medical Director. Dr. Stoner brings to Roche a wealth of experience in the medico-scientific world. His works in the field of bio-chemistry and laboratory methods, basal metablism and diabetes have been extensively reported and for a time (1921-1926) he was Associate Professor of Bio-Chemistry and Diseases of Metabolism at the Graduate School of Medicine, University of Pennsylvania.

The Roche Scientific Department is comprised of men well known in scientific circles everywhere and its staff is capable of dealing intelligently with not only clinical problems but also the chemical, bio-chemical and pharmacological questions related to medicine. Physicians are invited to correspond with the Department whenever special information, whether or not it pertains to a Roche product, is desired.

The American College of Physicians

Is to hold its annual clinical session in Minneapolis, Minn., February 10-14th, under the presidency of Dr. John H. Musser, of New Orleans. Mr. E. R. Loveland, 133 South 36th Street, Philadelphia, is secretary.

The Southern Medical Association

Held a splendid meeting in Miami, Fla., in November, under the presidency of Dr. Thomas W. Moore, of Huntington, W. Va., following which, about 300 members and ladies took advantage of the trip to Cuba. Louisville, Ky., was selected as the 1930 place of meeting with the date as November 11th-14th. Surgeon General Hugh S. Cumming, of the U. S. Public Health Service, Washington, D. C., was elected to the presidency of the Association, with Dr. Roy J. Holmes, of Miami, and Dr. Isidore Cohn, of New Orleans, as vice-presidents. Dr. W. E. Vest, Huntington, W. Va., was made chairman of the Council, and Dr. W. W. Crawford, Hattiesburg, Miss., chairman of the Board of Trustees.

Dr. E. G. Gill,

Roanoke, Va., by invitation addressed the Whitehead Medical Society of the University of Virginia, on December the 8th. His subject was "Some of the Problems of Bronchoscopy."

Dr. A. L. Carson, Jr.,

Medical College of Virginia, class of '25, has been appointed resident in obstetrics at the Nursery and Child's Hospital, New York City, for a period of one year beginning January 1, 1930. Before going to New York, Dr. Carson was practicing at Thorpe, W. Va.

Dr. and Mrs. C. A. Amos,

Alexandria, Va., spent their Christmas holiday in New York City, as the guests of Mrs. Amos' sister and brother-in-law.

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Dr. James N. Greear, Jr.,

Washington, D. C., has been appointed professor of ophthalmology at Georgetown University School of Medicine, that city, succeeding Dr. John W. Burke, resigned. Dr. Greear is a member of the class of '20, University of Virginia, Department of Medicine, and a member of the Medical Society of Virginia.

Dr. Walter M. Brunet,

Of Brooklyn, N. Y., was recently appointed chief of the Cancer Institute of Brooklyn. Dr. Brunet was a native of Petersburg, Va., and graduated in medicine from the former University College of Medicine, Richmond, Va., in 1911.

Dr. and Mrs. Marshall J. Payne,

Staunton, Va., spent the Christmas holidays at their son's home in New York City.

Associated With Dr. Kendig.

Dr. Allen Lloyd, of the Medical College of Virginia, class of '28, is associated in practice with Dr. E. L. Kendig, of Victoria, Va., during the winter months. Dr. Kendig will be in Richmond part of this time, serving as a member of the State Senate.

Dr. and Mrs. Henry Clay Smith,

Of Willamson, W. Va., spent the Christmas holidays visiting in Roanoke, Va.

Mexico Combats Its High Infant Mortality Rate.

The Government of Mexico has this year established a bureau of infant hygiene in the Federal Department of Health. The purpose of the new bureau is to reduce the present high infant mortality of the country, which at present takes a toll of 280 infants out of 1,000 born alive in Mexico City and even a larger proportional number in other parts of the Republic.

For Sale—

Suite 707 Medical Arts Building, Richmond, Va. On account of the necessity for moving into larger quarters, the present occupant will sell his stock in the Medical Arts Building Corporation at actual cost. This stock entitles the owner to occupancy of Suite 707. Six rooms, including reception room, consulting office, two examining and treatment rooms, laboratory and secretary's office. May be used either as doctor's or dentist's office. Can be easily subdivided. Address answers to Suite 707, Medical Arts Building, Richmond, Va. (Adv.)

Desires Change in Location.

X-ray and Laboratory Technician, employed at present time, desires change in location. Four years' experience. Qualified in all X-ray and laboratory technique, also basal metabolism. College graduate. A-1 experience. Address "R. T." care this journal. (Adv.)

For Sale or Lease—

Fireproof, brick hospital, modern in every detail, well equipped. Located in progressive community. Suitable for sanatorium or hospital of some definite type; another general hospital in town. Medical library and operating room fixtures, Kny-Scheerer sterilizers, etc., can be bought separately.

Write Mr. James H. Price, attorney for estate, Times-Dispatch Building, Richmond, Va. (Adv.)

Obituary Record

Dr. John Thompson Graham,

Of Wytheville, Va., died in a Roanoke hospital, December 16th, following an illness of several weeks. He was born in Pulaski County, Va., May 18, 1864. He was a graduate of the University of Virginia, Department of Medicine in the class of '88, and had been a member of the Medical Society of Virginia since 1890. Dr. Graham had been a member of the General Assembly for several terms and, at time of his death was ranking member of the Appropriations Committee of that body.

He is survived by his wife and one son, Dr. Charles F. Graham, of Wytheville.

Dr. Albert L. Sibold,

Newport, Va., was instantly killed, November 2nd, when the automobile in which he was driving was struck by a train. Dr. Sibold was 55 years of age and was a graduate of the Maryland Medical College in the class of '09. He was formerly a member of the Medical Society of Virginia.

Dr. Harry S. Corey,

Prominent homeopathic physician of Richmond, Va., was stricken with a heart attack while driving his automobile, December 15th, and died almost instantly. He was 58 years of age and was a graduate of the Boston School of Homeopathy in the class of '96. Dr. Corey had been a member of the Richmond Rotary Club for sixteen years. He is survived by his wife and two sons.